

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF NEW YORK

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UNITED STATES OF AMERICA,	:	12-CR-661(SLT)
	:	
	:	
-against-	:	United States Courthouse
	:	Brooklyn, New York
	:	
	:	Tuesday, April 28, 2015
AHMED, et al.,	:	
	:	
Defendant.	:	

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TRANSCRIPT OF CRIMINAL CAUSE FOR DAUBERT HEARING
BEFORE THE HONORABLE SANDRA L. TOWNES
UNITED STATES SENIOR DISTRICT COURT JUDGE

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1 COURTROOM DEPUTY: Criminal cause for Daubert
2 hearing, docket 12-CR-661, United States of Americas versus
3 Ahmed, Hashi and Yusuf.

4 MR. ARIAIL: Good afternoon, Shreve Ariail and
5 Annamartine Salick for the United States.

6 MR. STERN: David Stern for Mr. Yusuf.

7 MS. KELLMAN: Good afternoon, Your Honor, Susan
8 Kellman for Ali Ahmed.

9 MR. DE MARCO: Mark DeMarco for Mr. Hashi.

10 COURTROOM DEPUTY: We have two interpreters.
11 Please raise your right-hand.

12 (Courtroom Deputy swore Interpreter Gunilla Medina &
13 Anders Almgren.)

14 THE COURT: Ready to proceed?

15 MR. ARIAIL: We are, Your Honor, I think unless
16 defense counsel has something.

17 MR. STERN: We are ready. I will jut ask for a few
18 minutes after Doctor Nakasone's testimony. I received a
19 number of pages of notes he took this morning that I have not
20 read yet. It will not take me that long to read them, I will
21 need a little time.

22 THE COURT: Yes.

23 MR. ARIAIL: May I proceed, Your Honor?

24 THE COURT: Please.

25 MR. ARIAIL: The government calls Doctor Nakasone.

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1 DR. HIROTAKA NAKASONE, having been first duly sworn, took the
2 stand and testified as follows:

3 THE COURT: Thank you.

4 DIRECT EXAMINATION BY MR. ARIAIL:

5 Q Afternoon, Doctor Nakasone. If I can just ask you when
6 you testify, you should testify slowly. I know there are some
7 complex things we are going to talk about. Take your time so
8 that the Court Reporter can get everything down.

9 A Yes, thank you very much.

10 Good morning.

11 Q Good morning.

12 A Good afternoon.

13 Q Afternoon, you are right.

14 MR. ARIAIL: Your Honor, may I approach with two
15 documents 3500-HN-8 and HN-26. One is the resume for Doctor
16 Nakasone and the other is notes related to his testimony.

17 THE COURT: You may.

18 Q Doctor Nakasone, where do you work?

19 A I work for the Federal Bureau of Investigation,
20 Operational Technology Division which is located in Quantico,
21 Virginia.

22 Q What do you do for the F.B.I. at the Operational
23 Technology Division?

24 A Currently I'm serving as a senior audio advisor for the
25 Operational Technology Division. And I also, I oversee

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1 research projects in speaker recognition development and when
2 they say, issues involving any kind of human language
3 technology, including speaker recognition, I will advise,
4 accordingly, my supervisors and my senior executives.

5 And also, I function as a liaison point with other
6 agencies, federal and local in terms of the-- any kind of
7 audio technology.

8 As a collateral duty, I also oversee the training of
9 the audio examiners within the forensic audio, video and image
10 analysis unit within the F.B.I. Operational Technology
11 Division in Quantico, Virginia.

12 Q Just to back up a bit, you said Operational Technology
13 Division. What is the Operational Technology Division of the
14 F.B.I.?

15 A The division is charged with a lot of, in operational
16 technology components used in the investigative, you know,
17 aspect of the F.B.I.

18 It is-- the OTD, we call it OTD, is the main arm of
19 the technology development site. They are concerned about the
20 telecommunications, lots of other technical domain of, you
21 know, collecting criminal informations through body recording
22 or telecommunications entity. I cannot really go in detail.

23 They also have a cryptography, you know, technology
24 within it and it also houses the Bureau's, you know, digital
25 evidence laboratory which is, you know, accredited in a

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1 laboratory by American Society of Crime Lab Directors
2 Accreditation Board. In conjunction with the International
3 Standard Organizations under 17,025.

4 Q Doctor Nakasone, when you say, operational aspects or
5 operational, what do you mean by "operational"?

6 A Actual, you know, the operation-- needed by the F.B.I. to
7 perform investigations.

8 Q Now, let's back up a little bit and talk about how you
9 got to where you are. Where did you go to college?

10 A My first college was in Japan, and I went to University
11 of Ryukyus.

12 Q What 3500 number is marked on your CV?

13 THE COURT: 3500-HN-8.

14 Q Where did you go to college?

15 A First one was in Japan, Okinawa, Japan, University of
16 Ryukyus, which is one of the Japan's you know, national
17 universities.

18 Then I went to University of South Carolina, back in
19 1974, and I finished my second bachelor degree in psychology,
20 then moved on to Master degree from Michigan State University,
21 East Lansing. I majored in speech sciences and obtained my
22 first, you know, Master degree back in 1979.

23 And then went on to PhD, and I finished my PhD in
24 speech science in 1984. And I wrote my thesis for my, you
25 know PhD program, known as a computer voice identification

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1 method by using deviation spectra and fundamental frequency
2 contour.

3 Q And, let's talk about your career a little bit. Can you
4 tell us a bit about some of the jobs that you have had over
5 the course of your career?

6 A My first job was right after, my first degree. I don't
7 know if it relates to what I do today. But I worked as a
8 Court Appointed Interpreter, Japanese and English for
9 two years. And then I moved on to, you know, U.S., to pursue
10 advanced degree.

11 My first appointment was assistant professor at the
12 Michigan State University. But I stayed in that position,
13 very briefly, eighteen months or so.

14 And then I moved on to Los Angeles County Sheriff
15 Department to implement federal research grant in there. I
16 received no grant -- I shouldn't say "I", my colleague and I
17 under Los Angeles County Sheriff Department received funding
18 from National Institute of Justice to conduct, you know,
19 development of speaker recognition, you know, technology by
20 using computer.

21 And that was done between 1985 through 1989. I
22 think for the first two years or so, we received a funding in
23 the amount of \$250,000. After two years, it was extended
24 another two years.

25 In 1989, when the project was completed. I was

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1 hired by LA County Sheriff Department. In 1989, as a voice
2 specialist. I stayed there while conducting, the audio
3 related examinations, while continuing the further refinement
4 of the computer assisted, you know, voice identification
5 system.

6 I left LA County Sheriff Department in 1992 to join
7 the Bureau, and between 1992 through 1996, I was hired as an
8 outside consultant, but I stationed within the OTD, through
9 four years or so, and that was consequently followed by full
10 time employment.

11 In 1996, and since then, I have been working for the
12 Bureau for almost 19 years now.

13 Q And, if you could, tell us a little bit about some of the
14 professional societies that you are affiliated with that
15 relate to your work at the F.B.I..

16 A I am a member of the organization of scientific area
17 committees, which is the first, overarching organizations to
18 you know, oversee the entire forensic science, you know
19 disciplines, existing in the United States of America. This
20 organization normally, usually called by its acronym, OSAC.

21 OSAC is established by National Institute of
22 Standards and Technology which is part of the -- U.S.
23 Department, and it is working in conjunction with the National
24 Commission of Forensic Sciences, established by U.S.
25 Department of Justice, back in 2014. That is the, you know,

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1 most recent, you know activity. I get heavily involved.

2 I am a member of the American -- AAFS, American
3 Academy of Forensic Science. I am a member of the Institute
4 of Electrical, Electronics Engineering. I am a member of that
5 and I am also, you know, a member of the International
6 Association For Identification.

7 I am a member of the RDC, Speaker Recognition, the
8 Odyssey Speaker and Language Recognition.

9 And also the other-- a lot of, you know, the working
10 groups that I get involved. I function as a U.S. government,
11 you know, review board member for the-- you know, research
12 programs within the IARPA, stands for Intelligence Advanced
13 Research Program Activities.

14 Q And then, the group you just talked about there, OSAC, is
15 that the same group that Doctor James Wayman is a member of or
16 involved in?

17 A It is.

18 Q And, is there a particular subcommittee that you sit on
19 or deal with?

20 A I am chairing the subcommittee for speaker recognition
21 within OSAC.

22 Q And, what-- what is Doctor Wayman's title with respect to
23 that committee?

24 A Doctor Wayman is also OSAC member as a vice chair of the
25 subcommittee for speaker recognition.

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1 Q Now, Doctor Nakasone, have you published papers over the
2 course of your career?

3 A Yes, I have.

4 Q Can you just give us a sample of some of the papers you
5 published over the course of your career as they relate to the
6 subject matter.

7 A In earlier day, I publish a lot of, you know, research
8 projects, say like measuring the pause rate of an individual.
9 How pause and also, the voicing characteristics of individuals
10 who do not have larynx, called esophageal speech.

11 These were earlier days of my research topic and I
12 also did very serious, you know, experiment and studies on the
13 gunshot analysis in an effort to determine whether or not we
14 can determine the type of the weapons used by analyzing
15 acoustic signature in the recorded information. I had two
16 publications on that.

17 And then I published the results of my, you know,
18 research activities in L.A. County Sheriff Department, known
19 as CAVIS, computer assistant voice identification system. And
20 that was published in the CAVIS International Conference on
21 acoustics, speech processing. That is part of the IEEE group.

22 After joining the F.B.I., my publications were
23 pretty much, you know, concentrated on either developing
24 speaker recognition systems, or supporting, funding other
25 organizations, research organizations who will do R&D effort

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1 for the F.B.I..

2 I founded many organizations in my capacity as an
3 audio engineer for the F.B.I., and then speech.

4 Q In addition to your scientific background, do you also
5 have forensic background in doing speech comparison?

6 A Yes, sir. In 1994, right after I joined the Bureau, they
7 trained me for almost two years or so. I was qualified to do
8 audio enhancement and signal analysis and soon afterward, I
9 was qualified at the F.B.I. to conduct voice comparisons by
10 using spectrographic methodology.

11 And, probably since 1994 through 2009, I-- just ball
12 park figures, maybe about 30 to 40 cases, a year. In each
13 case, pretty much, you know contains about four comparisons.

14 So, you can-- well, about 120 comparisons-- actual
15 voice comparisons a year over twenty years. It is quite a
16 bit. Maybe two thousand, make comparisons.

17 Q Talking about automatic voice comparisons.

18 A Well, that will pretty much it was done by spectra
19 comparisons because the long practiced spectrograph comparison
20 technology, continued until 2012, May of 2012. Just about
21 three years ago, this unit that I was in, pretty much led by
22 me, forensic audio, video and image analysis unit, decided to,
23 you know, take a one step forward, to modernize speaker
24 recognition, you know, technology.

25 We abandoned the spectrograph comparisons and

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1 implemented automated speaker recognition, sometimes people
2 use it interchangeably. I try to be consistent. Automated
3 speaker recognition technology.

4 And, to implement that, we did lots of-- prior to
5 the implementation of course, there was a decade of, you know,
6 research activities and evaluation of the activities in
7 selection of the appropriate, you know, software tools.

8 We operate the automatic speaker recognition, you
9 know, according to the standard operating procedures, that is,
10 you know, unique to the F.B.I..

11 Q And, over the course of your career, have you received
12 awards for your work in this field?

13 A Yes, I have. Most recent one is award given to me by the
14 Office of Director of National Intelligence, Science
15 Technology Division. That award was accompanied by cash of
16 \$200,000, it is a grant, but not to my personal account.

17 It is a grant money to conduct basic research to
18 promote implementation of, you know, under pinning, scientific
19 under pinning of speaker recognition.

20 And, prior to that, I was awarded F.B.I. Director's
21 Science Award in 2007. That was also accompanied by cash
22 award of three thousand. That went to my bank account.

23 Q Are there any other awards that are of significance that
24 we should know about Doctor Nakasone?

25 A I have a few awards provided by U.S. Attorney's office in

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1 Houston for the work that I provided, assistance that I
2 provided during a Frye hearing.

3 I also received, you know, award from my Alma Mater,
4 Michigan State University in 2005 for the accomplishment of
5 publications, I guess.

6 And that-- that award was simply honorary award. I
7 was requested to stand and shake hands of the graduates during
8 commencement.

9 Q I think we will move on.

10 A Yes, there are more.

11 Q We will be here for awhile.

12 A Yes.

13 Q At some point Doctor Nakasone, did you become involved in
14 this case and how did you first become involved.

15 A I think it was sometime in January this year, the
16 divisions, you know, assistant general counsel, Greg Walsh
17 contacted me by E-mail, saying that I need to pay attention to
18 this, because I think, you know, F.B.I. hired, you know expert
19 witness from Sweden.

20 And I didn't know anything about that situation. So
21 I asked him, who is he. And Mr. Walsh told me that his name
22 is not Greg Lindh and still, I didn't know who he was.

23 Then, I think, you know, Mr. Walsh set up a
24 teleconference amongst ourselves and also between I think the
25 office of AUSA in Brooklyn. And at that time, I think I spoke

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1 with you know, Mr. Shreve Ariail and there was also a-- I
2 don't know who else was there, maybe Mr. Charmaine.

3 Q Mr. DuCharme?

4 A Right.

5 Q And just to be clear, you said earlier, I think you said
6 Greg, you mean Jonas Lindh?

7 A Yes. Originally he misspelled his name so I could not
8 find him anywhere. I was looking for Linda. The "H" was not
9 there.

10 Q And so at some point you had a conversation with
11 Assistant United States Attorneys and the F.B.I. agents
12 involved in the case?

13 A Yes. And during that time, I do remember requesting you
14 know, report so I can review it. And I think that
15 conversation took place toward the end of January.

16 Q And, during-- after you were contacted by the U.S.
17 Attorneys' office and the F.B.I., it was the agents in New
18 York City?

19 A Yes.

20 Q Were you asked to take a look at Mr. Lindh's report?

21 A Yes, I was.

22 Q And, if you recall, you know what exactly were you asked
23 to do?

24 A Just assess the content of the report and how I think
25 about, you know, technical, you know, content of the report.

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1 Q And at some point, were you also contacted by the defense
2 attorneys in this case?

3 A Yes, yes, sir.

4 Q Tell us about that.

5 A I received a phone call, I mean it was in my voice mail.
6 Actually, I do not know exactly how it went. Either I
7 returned a phone call or I was called. Maybe I-- either way,
8 the telephone conversation took place between me, myself, and
9 I think it was Mr. Dave Stern and Jane, Ms. Jane. I think you
10 were in on the phone.

11 We talked about it and at that time, I felt that I
12 was obligated to speak to them because, you know, on my part,
13 I misunderstood, you know what Mr. Greg Walsh was telling me.
14 I thought he was telling me that the Court, the Court has
15 already authorized the defense to subpoena me. So I willingly
16 and with free will, without worrying about too much, I
17 contacted and spoke.

18 But during that time, I mentioned to Mr. Smith and
19 Mr. Stern, that I had been already contacted by the
20 government. And in fact, I told them that I was expecting to
21 receive package from AUSA following day through the Federal
22 Express.

23 So, not knowing exactly-- not having had a chance to
24 review the report, I was also complying-- you know, I was
25 going to talk to them because Mr. Stern requested me. If we

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1 could have a teleconference again, you know, March 2nd.
2 Because prior to March 2nd, you would be out of country.

3 So, I said, yes. So March 2nd, I'm open. But
4 following day, I received the package and that package
5 contained four items, including a letter. I think it was a
6 motion from the defense side and that indicated that the
7 defense was going to request my testimony and also from Doctor
8 Wayman and Doctor Morrison. Pretty much based upon the-- my
9 testimony, used during, you know, Zimmerman case in Florida.

10 And then on the other, you know, that I forgot what
11 it was, but two other in the package was the original report
12 written in, you know, unknown language to me. Presumably, it
13 is not Swedish, but I could not tell what it was.

14 That content, you know, a few pages of the
15 translation. Then I realized that there was a full English
16 version of the report was also attached.

17 So, original report, English version and two
18 documents that was produced by defense counsels.

19 After reviewing Mr. Lindh's report, I immediately--
20 I felt that report was comprehensive and thorough and
21 completely different from the-- any kind of product produced
22 by the prosecutions, you know, witness, Mr. Tom Owen, during
23 Frye test.

24 So, I sort of, you know, discussed with my general
25 counsel and said, this is going to be a little different.

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1 This is going to be very tough for me to challenge this new
2 report.

3 Q Just to back up Doctor Nakasone, you're talking about the
4 Zimmerman trial and Tom Owen. Who is Tom Owen?

5 A He was one of the two experts hired, used during
6 Zimmerman case. And, I have known-- I had known Tom Owens
7 many many years. And I really didn't think he had, you know,
8 appropriate background to do-- you know, speaker recognition.

9 And then I got involved in the Zimmerman case
10 because I analyzed audio tape right after the incidents. The
11 case was sent from F.B.I. field office in Tampa and that case
12 came in as a hate crime.

13 And, incoming letter indicated to the examiner that
14 they need to know whether or not there is any usable speech
15 samples in the recording.

16 And then second question was, if we could detect in
17 the audio recording of this, you know, 911 containing the
18 commotions going on outside, including screaming and yelling.
19 I was asked to analyze, if there are any languages, word or
20 phrases, that may indicate, you know hate crime.

21 We did a very thorough analysis and I was the
22 primary examiner. I issued two, you know, conclusions. The
23 voice content in the recording is not suitable for doing any
24 kind of comparison at all, and we could not find any
25 derogatory languages in the recording of 911 call made by the

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1 defendant Zimmerman to the 911 stations.

2 So, that was the extent of the work I personally
3 provided and that report that I issued to the Tampa field
4 office of the F.B.I.. So it became a -- I mean it was-- came
5 to the defense group. That is why, I was called to testify.

6 Q Doctor Nakasone, let's talk about your testimony at the
7 Zimmerman trial. You ended up testifying for the defense in
8 that case, right?

9 A Yes, sir.

10 Q And, could you tell the Court generally what your
11 testimony was in that case.

12 A Because the requesting defense was not, you know,
13 federal-- federally involved, my, you know legal counsel
14 issued a Touhy memo. I testified under the constraint
15 limitations imposed by that Touhy memo.

16 And I simply testified to my qualifications, to the
17 fact that I analyzed the tape, and I provided, you know, those
18 conclusions. And I was prohibited from preparing for rebuttal
19 against the government, you know defendants.

20 Q Just generally Doctor Nakasone, what was your testimony
21 in the case?

22 A It was that this screaming voice, which lasted in that
23 designated area for a couple of seconds or so, should not be
24 used for the purpose of the voice comparison against.

25 Q Why not?

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1 A Because it doesn't have enough information. Not only
2 that, when someone screams faced with the eminent death or you
3 know, injury to the-- physical injury, screaming starts using
4 different parts of the muscle structure around the neck in the
5 vocal tract and once that happens, they produce a scream
6 voice. I don't think it is going to have typical, you know,
7 speaking characteristics. Therefore, I even-- I guess I was
8 requested by Police Department, what kind of an approach I
9 should recommend them to enact screaming. I recommended them
10 not to enact, because it is unlikely anybody can produce
11 identical screaming voices.

12 Q Did you have any other issues with the testimony of Tom
13 Owen?

14 A My concern-- my trouble-- my concern and trouble was the
15 fact that he tried to compare that screaming voice, such short
16 one against normal speech sample, Mr. Zimmerman. And that
17 is-- that is common sense, anybody should know, that is not
18 doable.

19 And then, another concern that I had is, his
20 unethical conduct. He imported that shortened screaming into
21 software he was using. It is called, you know Easy Voice, by
22 Matrix.

23 That is Russian software and I don't have any qualm
24 with that Russian software, but that Russian software spits
25 out, spitted out, that audio back. Saying that it is not

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1 usable because it was short.

2 But Tom Owen went along, hey, I have a problem, my
3 sample is too short. He talked to salesperson and then
4 salesperson said, well, you can make a loop. And make a
5 longer screaming sound and that is a no no.

6 So, it is pretty much, he-- pretty much indicate
7 that his behavior is unethical and indicates that he really
8 does not have good understanding what it takes to analyze
9 human speech for the purposes of speaker recognition.

10 Q So, Doctor Nakasone, just to be clear, the samples in the
11 Zimmerman case were inappropriate in your opinion for
12 analysis?

13 A Yes.

14 Q The expert witness in your opinion was unqualified to do
15 the analysis?

16 A Yes, precisely.

17 Q The methodology that the expert used was unethical?

18 A Yes. If you talking methodology in terms of the
19 procedure, not as technique. In terms of procedure that was
20 not appropriate.

21 Q And, are you familiar generally with the other witnesses
22 that testified for the defense in that case?

23 A I was familiar with Doctor James Wayman. I was familiar
24 with Doctor Peter French. I was familiar-- I am familiar with
25 Doctor George Turlington.

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1 Q And, Doctor Wayman, obviously we know who Doctor James
2 Wayman is. Who is George Turlington?

3 A George Turlington is in the community, we call him father
4 of speaker recognition. I think he was only one I could quote
5 back in 1982 or '83, when I was writing thesis. He was, you
6 know-- he has a Phd from the University of Wisconsin, went to
7 Texas Instruments and eventually he went to Department of
8 Defense. Then he went to, where else did he go? He also
9 worked for National Institute of Standards and Technology. He
10 has prolific publication in the area of speaker recognition.
11 I think even currently he serves as advisor for the National
12 Institute of Standards and Technology.

13 Q And, who is Peter French?

14 A Doctor French is-- I came to know him in person in 2004,
15 when we were having seminars in-- for the government. We
16 invited him as a lecturer. He is-- he is-- he uses, phonetic
17 knowledge to do forensic speaker recognition for the
18 government of the United Kingdom.

19 Q To your knowledge in the Zimmerman case, did any of the
20 experts who testified criticize the use of the technique of
21 automated voice comparison as a scientific matter?

22 A I don't think so. The focus was how Tom Owen did his
23 analysis.

24 Q So the concern was about the testifying witness in his
25 misapplication of the technique?

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1 A That is correct.

2 Q Now, I want to go back to your conversations with the
3 U.S. Attorneys' office and the F.B.I.. Did you conduct an
4 initial assessment of the report that Mr. Lindh prepared in
5 this case?

6 A I reviewed it and I think I provided my assessment of the
7 content of the report to you or your office over telephone.

8 Q And just generally if you can tell the Court, what was
9 your initial assessment when you reviewed Mr. Lindh's report?

10 A Initial assessment was, okay, this report is thorough. I
11 started reading it and realized that he was carefully
12 evaluating, the quality of the input. And also, he was shying
13 away from analyzing language unknown to him. By reading
14 report, I could tell the language spoken in the evidence in
15 the audio included Somali language and then Swedish language.
16 Now and then inserted by other languages, like Arabic
17 language.

18 And, I noted that he didn't want to analyze for the
19 comparison purpose the language he was not familiar with.
20 Somali for his perception of phonetic analysis. He
21 concentrated on, you know, Swedish language. That was kind of
22 reasonable practice. We do that as well.

23 And, another thing is that he was doing a very
24 careful analysis including acoustic measurements of speech
25 samples. He was measuring articulation rate and measurement

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1 of fundamental frequency, fundamental frequency. And he was
2 also measuring format.

3 This are, well studied, you know, speech features
4 for research purposes, phonetic study. And I don't know to
5 what extent it will be, you know, useful in discriminating,
6 individual speakers. But it is useful. How much? I think it
7 depends on the preparation, I guess.

8 He has done that and that was good one. And he
9 also, you know, applied automatic speaker recognition
10 software. It is commercial software and remaining of my
11 testimony, I will be careful not to give any impression to the
12 Court or to the public that the F.B.I. is endorsing any
13 particular, you know, commercial software.

14 But I will be talking in terms, general trend of the
15 automated speaker recognition technology available.

16 Q Just on that point, Doctor Nakasone, I don't want you
17 to -- put you in any position to be awkward for you generally,
18 what can you say about the software that Mr. Lindh used based
19 on your knowledge of the missed evaluations from 2012, the
20 SRE.

21 A I didn't participate in SRE for several years, and also
22 judging from our own internal evaluations and everything else.

23 Okay.

24 Q Doctor Nakasone, if I can-- may I withdraw the question
25 and repeat it.

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1 THE COURT: Yes.

2 Q I just want Doctor Nakasone, I-- to the extent that you
3 can caveat your assessment based on your understanding of the
4 NIST evaluation, it would be helpful. Because I don't want
5 you to talk about things that are not available for folks here
6 in the courtroom.

7 So, based on your understanding of the results of
8 the NIST, the NIST 2012 SRE results, can you tell the Court
9 your assessment of the software that Mr. Lindh used.

10 A Before-- I need to do some clarification. NIST has never
11 evaluated software itself used by Mr. Lindh.

12 But what they evaluated is many others and there was
13 a team called ABC. And ABC, you know combination of three
14 research teams. "A" stands for Agnitio; "B" stands for Bruno
15 University, in Czech Republic; and "C" stands for -- I cannot
16 spell out. It is French university in Montreal. I'm sorry, I
17 can't give you a spelling.

18 So, therefore, the company who sells, you know,
19 Batvox, which Mr. Lindh used, participated in this evaluation
20 as one of the key members. So I cannot really interpolate
21 performance of the ABC, with Mr. Lindh's software.

22 But, in general, it seems to be always somewhere in
23 the front pack. Meaning that sometimes pretty good, sometime
24 in the middle of the pack, sometime maybe back of the pack.
25 But in my mind, it was kind of technology that I need to

1 track.

2 Q When you say, it is a kind of technology you needed to
3 track, why did you need to track it?

4 A Watching.

5 Q Why did you need to track it?

6 A Why it is a commercial software and sooner or later if it
7 is really good enough, probably it will be beneficial for an
8 agency to purchase it and use it. Rather than pouring, multi
9 million dollars trying to establish our own government
10 proprietary software which tend to be very expensive.

11 So tracking, once a tracking is completed. I guess,
12 probably we may want to, you know, more thoroughly evaluate
13 its functions in-house and that will require, you know, buying
14 it.

15 So, we bought Batvox in 2013, and it still going on,
16 evaluations, by designated individuals. Not by me. But
17 somebody else.

18 (Transcript continues on next page.)
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1 BY MR. ARIAIL: (Continuing)

2 Q Dr. Nakasone, just to clarify, when you talked about ABC
3 and Agnitio's involvement in the, in the NIST evaluations, are
4 you able to say generally whether the technology that's in
5 Batvox, or, sorry, that was tested is the core technology of
6 Batvox?

7 A That's what I assume. The core technology --

8 MR. STERN: Objection as to what he assumes, Your
9 Honor.

10 A Okay. The core technology was tested but once it becomes
11 commercial products, there will be a lot of interfaces and
12 there will be a lot of additional procedures implemented to
13 make it, you know, reference-worthy. So I think, in general,
14 you know, it will be reasonable to assume that, you know, good
15 core technology may produce, you know, good, you know,
16 application software, but there's really no guarantee that
17 would be the case.

18 Q And, in part, based on the ABC results in the NIST
19 evaluations, the FBI decided to buy Batvox?

20 A Yes.

21 Q So, Dr. Nakasone, after you provided the FBI and U.S.
22 Attorney's Office your initial assessment of Mr. Lindh's
23 report, did you do anything else in connection with the case?

24 A Yes. By request made by your office, Mr. Ariail's
25 office, I evaluated quality over entire audio recordings.

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1 Quality assessment is your first step. Usually test is done
2 to assess and determine whether each audio file is good enough
3 to be compared against each other and I did, yes, I complete
4 that assessment and I think I conveyed the results of my
5 assessment over the phone.

6 Q And, generally, if you could explain to the Court the
7 results of your assessment?

8 A Okay. There were -- okay. We are talking about KS-1,
9 KS-2, UK-1, UKS-1, UKS-2 and UKS-3. I found a few of those
10 audio files did not meet my criteria to do analysis. I
11 indicated that in my notes. And, further, I also did an
12 assessment whether or not there was any, you know, misbehavior
13 in terms of channel mismatch conditions. To do, for me to
14 assess integrity of the channel effects, I have to run some,
15 you know, quick, you know, scoring and that scoring was
16 performed to check the integrity of the data, whether or not
17 cell phone channel --

18 MR. STERN: Your Honor, I'm objecting to all of this
19 testimony. This is not rebuttal. It's expert testimony about
20 which we were not given notice.

21 MR. ARIAIL: I apologize, Your Honor. I actually
22 didn't mean for Dr. Nakasone to do a full analysis in front of
23 the Court, but there was notice of the report that he --

24 MR. STERN: There was not expert notice. He was
25 required to give a summary of his opinions and the bases for

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1 those opinions. So there was not expert notice.

2 MR. ARIAIL: I apologize. I'm going to withdraw,
3 Your Honor. I'm just trying to get a general assessment from
4 Dr. Nakasone of his review of the report.

5 THE COURT: All right.

6 Q Dr. Nakasone, let's stay away from the details too much
7 here if we could and just kind of keep it focused on
8 generalities. Let's talk about the materials in this case.

9 In your opinion, were the materials that Mr. Lindh
10 reviewed, were they sufficient for purposes of doing the
11 analysis?

12 A I would say something like 60 to 70 percent was
13 sufficient audio recordings.

14 Q And for what purpose?

15 A For the speech recognition by machine, by computer. And
16 some of them were insufficient by us, but I did not preclude
17 that an audio can be analyzed by somebody who knows language
18 well and also somebody who's got, you know, forensic knowledge
19 because forensic knowledge, if provided by well trained, you
20 know, phoneticians would provide, you know, some advantage
21 over regular, you know, speaker recognition experts who really
22 do not have no training in phonetic assessment.

23 Q And can you explain that to the Court a little bit? Why
24 would they, a phonetician have an advantage over someone who's
25 just doing automated voice comparison?

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1 A The ultimate speaker recognition, Your Honor, is,
2 extracts speech features that would be correlates of the
3 biological anatomical makeup of individuals.

4 MR. STERN: Judge, I'm sorry to interrupt. May I
5 have a minute to speak to my co-counsel before this answer is
6 done? I want to try and resolve something.

7 THE COURT: With your co-counsel?

8 MR. STERN: All of my co-counsel, I mean.

9 THE COURT: Yes.

10 MR. STERN: Thank you.

11 (Pause.)

12 MR. STERN: Judge, I believe this is also expert
13 testimony which we did not receive notice and I believe it
14 does not rebut anything that we did, that this is just a way
15 of doing a second examination. If they wanted to, they could
16 have done it in the first place.

17 I don't intend to stand up unless you tell me I have
18 to every single time this kind of testimony occurs. I'd like
19 to have a standing objection to it.

20 THE COURT: How am I supposed to know what your
21 standing objection is objecting to? I mean --

22 MR. STERN: Judge, I'm glad to stand up then.

23 I'm objecting. I think this is expert testimony
24 which we did not get notice and I do not think it's rebuttal.
25 I object on both those grounds.

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1 MR. ARIAIL: And, Your Honor, I'll just make a
2 record here obviously. We obviously provided notice with
3 respect to Mr. Lindh's testimony, ample notice as the Court
4 has indicated. Then we were advised by defense counsel that
5 they intended to call Drs. Morrison, Wayman and Nakasone to
6 rebut the government's proffered testimony.

7 After we learned about that information, the
8 government advised defense counsel and the Court that we
9 intended to call Dr. Nakasone as a rebuttal witness to address
10 the criticisms that were set forth in the document, many of
11 the documents the defendants filed in this case which
12 criticized the methodology, the science, the application,
13 qualifications of Mr. Lindh across the board including very
14 particular aspects of his report and I think this is fair
15 rebuttal.

16 I also think that the government has provided well
17 more than sufficient disclosure for Dr. Nakasone. Excuse me.
18 We provided 3500 material and Giglio Yo material regarding
19 Dr. Nakasone, the bulk of it last Friday, two Fridays ago to
20 the defendants, and subsequently provided additional
21 disclosures as they became apparent to the government. Those
22 included very specific notes that Dr. Nakasone took during his
23 review of Mr. Lindh's analysis. They also included e-mail
24 conversations between the government and Dr. Nakasone. They
25 included notes and reports related to conversations the

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1 government had regarding Dr. Nakasone's assessment of
2 Mr. Lindh's analysis. So, I think we've complied with our
3 obligations and this is an appropriate witness for us to call.

4 MR. STERN: I think the government is surprisingly
5 confusing 3500 obligations with notice obligations. They were
6 anxious for notice from us under the statute. You directed us
7 to provide it and we did.

8 THE COURT: Well, you keep saying you did. I have
9 not ruled that you did, but go on with regard to Dr. Nakasone.

10 MR. STERN: That notice and anything written before
11 this hearing is not part of this hearing. Rebuttal --

12 THE COURT: I'm going to, because it is, with regard
13 to criticism of Mr. Lindh's testimony so I am going to allow
14 it.

15 MR. STERN: We never had our expert say one word
16 about the quality of the recordings, yet we're being given a
17 dissertation on the quality of the recordings. That doesn't
18 rebut anything we did so I object to that testimony.

19 THE COURT: All right. Thank you.

20 MR. ARIAIL: And just on that point, Your Honor,
21 defense specifically challenged that aspect of Mr. Lindh's
22 analysis in all of its filings and the obvious conclusion by
23 the testimony of Dr. Wayman yesterday is that Mr. Lindh did
24 not do an appropriate analysis of the materials which
25 necessarily includes some kind of objection to the materials

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1 underlying the analysis that he did. So I think it's
2 appropriate.

3 MR. STERN: Not the quality of the materials.

4 THE COURT: All right. Overruled.

5 Q So, Dr. Nakasone, just as a general matter, can you talk
6 about, and I just want to -- I'm not sure where we left off.
7 Can you talk about your opinion -- well, first off, let's just
8 talk about your assessment of Mr. Lindh as an expert in the
9 fields of phonetics, acoustics and automatic voice comparison.

10 A It's kind of really ideal combination of the skill sets,
11 technology and knowledge and he's using the fused decisions by
12 mathematical computations by computer and he's applying his
13 own phonetic knowledge which is obtained through his academic,
14 you know, academic course and he is also using this risk
15 analysis. And of course, you know, a fusion of those three
16 cannot really be done mathematically but probably he uses, you
17 know, the protocol made available by his organizations in
18 Sweden which I don't know. I cannot talk about it because I
19 don't know. But the, there is a trend in the scientific
20 community in the speaker recognition that probably it would be
21 best if the automated speaker recognition is augmented by high
22 level of information.

23 High level information means that something beyond
24 the anatomical qualities uncovered from the signal but
25 something which happens in the behavior part of those speech

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1 production, say, like a computer doesn't know whether this
2 person is, has no pitch information, the computer wouldn't
3 know the nuance of the speech and right now, computer wouldn't
4 know what would be the marker kind of information by the
5 individuals.

6 For example, from my experience, there were, you
7 know, cases going on, kind of threatening case. This
8 individual made many telephone calls from different parts of
9 the United States of America, but all the time this individual
10 used, you know, a particular phrase in a particular
11 intonation. Like, he used to ask, Are you listening to me?
12 Are you listening to me? He does that all the time. Sometime
13 that kind of information become a cue, and imagine when
14 phoneticians can pick up something more subtle information,
15 not from, you know, sentence level but from, you know, smaller
16 units of sound. They're trained to do so but, you know, I am
17 not trained in that. It requires, you know extended training.

18 Q And when you say it requires extended training, you're
19 talking about phonetics now, right?

20 A That is correct.

21 Q And do you -- is it your opinion that Mr. Lindh's
22 expertise in phonetics assisted in the evaluation that he did?

23 A I believe so.

24 Q And you talked, I think, briefly about acoustic analysis.
25 What's acoustic analysis again?

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1 A Usually it means measurement of speaking pitch. That's
2 what we say, but in, you know, in the science community, we
3 call it fundamental frequency and that tells something about
4 the speaker. And also acoustic, you know, measurements would
5 be to, you know, measure the speech of individuals, how many
6 syllables the person, you know, produces per, you know, minute
7 or per second.

8 Then, and then another column of measurement is
9 called formant measurements. Formants are something created
10 by resonance happening in individual's, you know, vocal tract
11 and the nasal tract. And these measurements are usually
12 called acoustic measurements and measurements are, you know,
13 objective and when we repeat the same measurements, we can
14 expect to get the same results.

15 Q And I want to just ask you this question. Not particular
16 to this case but, in general, does, is conducting acoustic
17 analysis, does that assist in voice identification analysis?

18 A Not always. Not always because those measurements tend
19 to be kind of, you know, general characteristics.

20 So, like, the pitch information, usually the male
21 grownup, when you ask, you know, has pitch around 120 hertz.
22 Female has double of that, 240 hertz. And then it varies, you
23 know, say one standard deviation of 20 hertz or so. But
24 probably the statistics of this pitch information would be
25 just like information provided by human height. It's vary

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1 across the human height. We can tell from very tall man from
2 a shorter man, but if everybody's kind of on the average,
3 everybody's like a 5-10, 5-11, 5-8, you don't use that height
4 information to distinguish individuals because height may
5 change depending on what clothes they are wearing, what shoes
6 they are wearing, what kind of weight somebody might have.

7 Also, the pitch information is useful only as long
8 as the pitch measured from two individuals are extreme,
9 extremely different, but if they converge through the median
10 range or average range, it become useless. So, it's a just
11 good means. It would be a useful tool, but not all the time.

12 Q So when you're doing speaker comparisons, is it a good
13 idea to do an acoustic analysis?

14 A Yes.

15 Q And is it also, to the extent that you're capable of
16 doing it, is it a good idea to phonetic analysis?

17 MR. STERN: Objection. This is not rebuttal.

18 THE COURT: Objection overruled.

19 Q And to the extent that you're capable of doing it, is it
20 a good idea to do phonetic analysis?

21 A Yes.

22 Q And does acoustic analysis and phonetic analysis give you
23 more comfort and competence in your automatic voice comparison
24 analysis?

25 A Yes. We quoted, you know, independent orthogonal

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1 analysis. If they give the same information as, you know, the
2 features captured by the computer, it's going to be useless,
3 but if they are independent, that's good. And then that's why
4 it becomes critical for the, you know, analyst to be trained
5 thoroughly. He will decide under what condition those
6 acoustic information would be useful or just doesn't do
7 anything.

8 Q I want to turn to -- there was a lot of testimony. You
9 were in the courtroom over the last few days. There was a lot
10 of testimony about Mr. Lindh's conclusions and the way that he
11 expressed his conclusions. Do you remember that testimony?

12 A Yes, I do.

13 Q Okay. Could you generally just tell the Court your
14 opinion on the way that Mr. Lindh expressed his conclusions
15 and what you think about that?

16 A First thing that come to my mind is by using this
17 hypothesis approach, as long as you use the one hypothesis,
18 he's indicating that results of the conclusion or his
19 conclusion must be taken as a supporting hypothesis, meaning
20 it's his best estimate or his likelihood, not precise nor
21 certainty.

22 Q What's significant about that?

23 A He's saying that, you know, there's a high likelihood
24 that the voice samples was produced this person or that
25 person, but he's not declaring that this voice was produced by

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1 this individual. That's the, I guess the nature of the, you
2 know, the word hypothesis. It's not theory but hypothesis.

3 Q Would it concern you if someone were to testify
4 conclusively about the identity of the speaker?

5 A Yes. If he was more forthcoming and offering, what do
6 you call it, conclusive results, I would have been concerned
7 because the consensus among the, you know, community is
8 speaker recognition technology has inherent errors because
9 it's, the features are not really measured physically. Nobody
10 is going to look at the inside of mouth. Rather, it's
11 inferring by analyzing the audio information. It's indirect
12 assessment of vocal structure. Because of that, they say
13 always inherent uncertainty. If somebody offers, you know,
14 conclusively and positively, then not only myself but the
15 community would know this person really doesn't know what he's
16 doing.

17 Q You talked about phonetics just a little while ago and I
18 want to go back to that for a second.

19 In order to phonetically analyze audio in a case,
20 what do you need to, what do you need?

21 A I think usually -- okay. I'm not phonetician. I can't
22 speak for them. It's outside scope of my expertise, but
23 usually --

24 MR. STERN: Objection, Judge.

25 A -- they assess --

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1 THE COURT: I'm sorry?

2 MR. STERN: Objection to his answer. He's not an
3 expert. It's outside his expertise.

4 THE COURT: Well, I'm going to allow him to finish
5 that. I don't think he's testifying about it. He's saying
6 that he can't.

7 MR. STERN: Okay. Let's see if that's what he's
8 testifying to, Your Honor.

9 Q What do you need, Dr. Nakasone?

10 A My response would be limited to my background but I have
11 taken a few courses in phonetics during my graduate program.
12 But, anyway, Mr. Ariail, can you please repeat the question
13 again?

14 Q In order to do a phonetic assessment, what do you need?

15 A Good hearing, good trained hearing, and that must be
16 augmented by device or machine that shows the graphic, you
17 know, rendition of a spoken message in three dimensional way.
18 I think that would help phoneticians to confirm what he hear
19 is actually there by looking at the graphics.

20 Q I think my question is a little simpler. Do you need to
21 speak the language?

22 A Thank you very much. Yes, you need to know, the analyst
23 need to know the language. And --

24 Q And what -- sorry. Continue.

25 A So, for example -- I cannot speak for Mr. Lindh. For

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1 example, if we receive a case containing, you know, language
2 unknown to us, we have to request linguistical assistant from
3 FBI language services sections. Without them, we cannot go
4 anywhere. And that was the case, truly the case with, when we
5 was still using the spectrographical comparisons, but there's
6 a little bit difference once we started using, you know,
7 automatic speaker recognition systems because nowadays, the
8 automatic speaker recognition available can handle comparing,
9 you know, two different languages.

10 My mother tongue is Japanese. You take, you know,
11 my voice samples when I'm speaking in English, keep it to
12 yourself and then a week later, I'm going to speak in Japanese
13 and you take that one and compare to my previous version and
14 machine can reasonably recognize it's me. Those are two
15 samples produced by me. It's called cross-language speaker
16 recognition. Now, there are error rates associated with it
17 but still it's doable.

18 So, but for the phonetician, for them to do
19 thorough, you know, analysis, definitely they can do only
20 language they are familiar with and most likely native, at the
21 native level.

22 Q And does the FBI have on staff any Swedish phoneticians?

23 A Unfortunately no.

24 Q When you say unfortunately no, what do you mean by that?

25 A In the past, we tried to, you know, hire phoneticians to

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1 the laboratory.

2 Q And as a result of reading Mr. Lindh's report, what are
3 your thoughts on hiring phoneticians from the FBI?

4 A Okay. I have to reflect what I was thinking. If this
5 case came to me or to my unit, can I talk about that
6 hypothetical?

7 Q Go right ahead, Mr. Lindh -- I'm sorry, Mr. Nakasone.

8 A Finding out the condition of Somali, and if I knew there
9 was, you know, a Mr. Lindh somewhere in -- I didn't know
10 Mr. Lindh at the time, but if I knew hypothetically, I would
11 have, you know, recommended New York, US office or FBI office,
12 that, you know, please hire somebody from Sweden because this
13 person is well trained and speak the language and this
14 practice has been done pretty, you know, constantly. When we
15 had, you know, Spanish language, of course, you know, I was
16 requested if there's anybody in the world who speaks Spanish
17 native, as a native tongue, and I can do, you know, careful, I
18 mean, ultimate analysis. There was one person in Madrid I
19 knew so I recommended him to assist in the New York field
20 office. That happens.

21 So, although -- I may be a little going ahead, I'm
22 sorry. Although we don't really testify to the results within
23 us we did in the courtroom, but it is, I mean, it's okay for
24 us to recommend somebody else and I used to recommend my, you
25 know, mentor who is not with us, he's not under the FBI policy

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1 not to testify. He can testify freely.

2 So, you know, in other words, I don't speak, you
3 know, Somali nor Swedish and nobody else in the staff can do
4 that, so if this came, this came to us assisting our
5 assistance and we cannot do it, I -- it had been great
6 resolution I could provide by recommending somebody who
7 speaks, you know, and then also qualified examiners who speaks
8 the language and are qualified examiners.

9 Q I want to talk about something you just brought up there.
10 Is there an FBI corporate level policy prohibiting the
11 testimony in court of examiners as to conclusions related to
12 automatic voice comparison?

13 A I'm going to be careful in answering this question. We
14 do have policy but that -- I think the word "policy" is
15 defined loosely. We have a practice or protocol we practice
16 for a few decades. To do the voice comparison only as an
17 investigative guidance to the contributor, not to testify in
18 the court, but the fact is that in a policy -- it's not really
19 incorporate in the policy. It's not written by FBI attorneys
20 or gone through attorneys', you know, approval process. It's
21 not corporate policy. And the federal judge can subpoena any
22 voice comparison examiners and we don't have any reason to go
23 against, you know, federal subpoena.

24 Q And let's just talk about that. You're talking about
25 your protocol or practice with respect to testifying in court.

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1 Why is it or what are the reasons why the FBI doesn't testify
2 about conclusions regarding automatic speaker recognition in
3 court?

4 A Primary reason is the -- okay. There are some
5 uncertainties about error rates coming up and there are some
6 uncertainties how machine is going to perform, but if you are
7 talking about the historical protocol, there was a limitation
8 in the technology so that we can produce, you know, conclusive
9 opinions. Conclusive opinions means very small error rates
10 and because of that lack of, you know, error rates and also
11 because lack of the support by the, you know, scientific
12 community, we had that, you know, practice or protocol.

13 Now, in times of the -- because we kept in our
14 protocol even when we shifted from antiquated technology to
15 modernize, you know, ultimate speaker recognition about three
16 years ago, we kept that in the protocol because basically we
17 need to do a little more research to, you know, formalize the
18 standards and guidelines not just in the FBI. I don't think
19 FBI will be ready to start testifying by themselves. I think
20 they would like to see if it would be, you know, it will reach
21 a consensus in the community say we are ready to go. And I
22 think that could be the one reason we have this, you know,
23 subcommittee within OSAC for speaker recognition.

24 Well, personally, it still may be, especially after
25 I joined the Bureau, I have testified numerous times against

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1 the spectrograph, you know, voice comparison examiners and
2 often time I realized that these people should have, you know,
3 a sharp tool which they do not know how to use it. In other
4 words, FBI did not really want to go out and begin to testify
5 by using this technology for several reasons. That could be
6 one. We don't want to be the one who opens up, you know, the
7 floodgates.

8 Q So, Dr. Nakasone, is it fair to say that FBI is
9 conservative in its approach to forensic science?

10 A Yes, especially for, you know, speaker recognition
11 domain, we remain very conservative.

12 Q And is one of the reasons the FBI is very conservative
13 about its approach to automatic speaker recognition is because
14 of the history of charlatans testifying in court about voice
15 identification analysis without proper qualifications?

16 MS. KELLMAN: Objection to the leading.

17 THE COURT: Overruled.

18 A That could be some concern. That could be one of the
19 concerns.

20 Q And is it fair to say that one of the main concerns the
21 FBI has about testifying to the results about ASR or automatic
22 voice comparison is that untrained examiners would
23 inappropriately seek to exploit the technology based on the
24 FBI's stamp of approval?

25 MR. STERN: Objection. Leading.

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1 THE COURT: Overruled.

2 A I've got to be really careful answering this question.
3 The -- so far, really, there hasn't been any instance as far
4 as I know that automatic speaker recognition technology was
5 successfully introduced in the courtroom. Nowadays, it is
6 very easy for many, you know, practitioners to buy cheaper
7 software now and we want to make sure that before we testify,
8 there would be, you know, globalized standards so that not
9 only us, but other people also can testify, and we have a
10 definition of the level of the training and we have a
11 guideline so that not just everybody else can do it. Until
12 then, probably I think it would be FBI's position to maintain
13 this stance to keep it conservative.

14 Q And that's what you were talking about a minute ago when
15 you were talking about a consensus?

16 A Right.

17 Q Okay. And just to be clear, the consensus you're talking
18 about is a consensus on methodology?

19 A Consensus on methodology and procedures including, you
20 know, how we are going to render our final opinions. And
21 those, you know, standards, guidelines in the consensus to be
22 produced by this OSAC subcommittee for speaker recognition.

23 Q The testimony that Mr. Lindh gave, you observed that,
24 right?

25 A Yes, sir.

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1 Q And what are your thoughts in terms of Mr. Lindh's
2 testimony as it relates to automatic voice comparison?

3 MS. KELLMAN: Objection to his thoughts.

4 THE COURT: Yes.

5 MR. ARIAIL: I'll be a little more specific.

6 Q In this case, as applied by Mr. Lindh, what is your, what
7 is your opinion of the testimony that he offered?

8 MR. STERN: Objection.

9 THE COURT: Overruled. I will hear it.

10 A Opinion of his, about his testimony or his report?

11 Q His testimony and the report.

12 A His, you know, testimony was consistent. I think that he
13 was sticking to his, you know, principle about the, you know,
14 the, I mean, you know, the hypothetical nature of his, you
15 know, conclusions. And also he was consistent in his
16 testimony and I was impressed by the fact that, you know, he
17 really never offered that, his conclusion was conclusive.

18 MR. STERN: Objection.

19 THE COURT: Overruled.

20 A And in terms of his reports as far as I reviewed a few
21 weeks ago, report is written far more comprehensively than we
22 practice and it was not thorough and probably his report is a
23 combination of our, you know, short report plus every notes we
24 have taken, but usually report is written so that, you know,
25 contributor can understand what's being reported and it's not

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1 written so that anybody else can completely repeat what he has
2 done. It's written for the people who can -- especially for
3 Mr. Lindh's report. I think he wrote a lot more than what,
4 you know, contributing agency needs. It was written as if it
5 was in the paper but not quite a paper.

6 THE COURT: When you say more comprehensive than our
7 reports, "our" is?

8 THE WITNESS: I was talking about FBI's report.

9 A And usually report is written in such a way that the
10 message about the methodology, why he was doing it, where he
11 got the evidence and how he did the analysis and what was the
12 result of analysis and what happened to, you know, the
13 evidence he received, and usually doesn't go into, you know,
14 references or bibliographies utilized for writing the report.

15 So, it was a little, a little, you know, more
16 information than I expect from a normal report of the results
17 of the, you know, speaker comparisons. So it was hard for me
18 to, you know, to discard because of the quality of the report.

19 Q And are you concerned in any way with Mr. Lindh's
20 conclusions, his methodologies or his expertise?

21 A Just one. Overall, I -- you know, I mean, the report
22 format is totally different from ours, however, everybody
23 reports in different ways.

24 He's using this scale from a minus 4 all the way to
25 zero and it keeps going up to a plus 4. He's got, you know,

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1 nine scales. On the other hand, some only have seven and we
2 have five scales. We just go by, you know, probable match,
3 match inconclusive, probable no match and a no match. It's
4 just our decision is dictated only by five potential, you
5 know, categories.

6 There's some differences but because of that
7 difference, I'm not saying what he's doing is right, I mean,
8 wrong or right. It's -- I think he's doing according to the
9 environment of his, you know, forensic laboratory. So I don't
10 have an issue with that, but the only one issue I had was I
11 didn't know what he really means by small chance.

12 For example, in his conclusion of the hypothesis
13 one, he said that there's, the results of analysis supports
14 hypothesis one. And then a chance of, you know, the
15 hypothesis correct is very small and what does he mean by very
16 small? But, okay, it's okay, you know, because he's following
17 his own, you know, contribution or protocol, but I think I
18 want to know probably what he means by very small. And he's
19 not qualifying it and probably we don't know how to qualify it
20 yet right now. That's only my concern that I have.

21 (Continued on next page.)
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1 BY MR. ARIAIL:

2 Q Do you have any concerns as to whether or not about--
3 excuse me, do you have any concerns about having Mr. Lindh's
4 testimony be admitted in Court.

5 MR. STERN: Objection.

6 MS. KELLMAN: Objection.

7 THE COURT: I'm going to allow you to answer that.

8 A Okay. I gotta formulate my thoughts carefully.

9 Okay. What I'm going to offer, that is not really
10 represent the position of the organization of the scientific
11 area committees, it is just my thoughts.

12 MS. KELLMAN: Objection, Your Honor. He speaks for
13 a committee.

14 THE COURT: Sustained.

15 Q He can --

16 THE COURT: No.

17 MR. ARIAIL: I will rephrase Your Honor.

18 Q Doctor Nakasone, can you offer your opinion as to-- let
19 me ask you this, in this case, as applied by Mr. Lindh, is it
20 your opinion that Mr. Lindh's testimony would assist the Court
21 and the trier of fact, in determining that the unknown voice
22 samples were likely or not likely to have been produced by the
23 defendants?

24 MR. STERN: Objection.

25 MS. KELLMAN: Objection.

1 THE COURT: Can you answer that question?

2 A Okay.

3 MS. KELLMAN: That was a "yes" or "no" question.

4 MR. STERN: Objection.

5 A In the lack of-- I cannot.

6 THE COURT: The objection is overruled.

7 A In a lot of this, you know standards and guidelines it
8 takes a couple of years or so. But in my opinion, in the
9 process or in the mean time, if good, you know, analysts and
10 good reporting, you know, practice comes along, I think we
11 should-- I mean I think it would be, you know, useful for the
12 Court. You know, also fact finders, to accept that, you know
13 evidence provided by Mr. Lindh with the following conditions,
14 that his report should be corroborated with other evidence
15 available.

16 And so also, taken, in evidence, by Mr. Lindh, would
17 be taken under abundant cautions for the limited accuracy.

18 Q And, talking about guidelines for a second and consensus
19 on guidelines. You testified earlier that there is not a
20 consensus on guidelines on the offering of conclusions related
21 to voice identification. Do you remember that?

22 A Yes, I do.

23 Q And, are you aware of global guidelines for other
24 forensic sciences?

25 A No.

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1 Q So there is no global forensic standard for the admission
2 of D.N.A. evidence that you are aware of?

3 MS. KELLMAN: Objection, he said he is not aware.

4 THE WITNESS: I can't speak.

5 THE COURT: Yes, sustained.

6 Q Are you familiar Doctor Nakasone with an article
7 entitled, Forensic Speaker Recognition, A Need For Caution?

8 A Yes, I am.

9 Q Can you just tell the Court a little bit about what that
10 article is about.

11 A There are two which--

12 MS. KELLMAN: Your Honor, can we get the offer.

13 MR. ARIAIL: 3500-VIM-6, written by Joseph.
14 Campbell, Wade Shen, Reva Schwartz, Jean Francois Bonastre. I
15 can't pronounce the last name, Driss Matrouf.

16 MS. KELLMAN: And the 3500.

17 MR. ARIAIL: VIM-6.

18 Q Are you familiar with the report?

19 A Yes, I am.

20 Q Generally, what is the thesis or the nature of that
21 report?

22 A Okay. This article was written in 1999, as a sequel or
23 update on the initial caution paper written in 2003. I was
24 involved providing that information during 2003. But, the
25 message of this caution paper in 2009 is that the speaker

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1 recognition technology has attained, you know, certain
2 maturities, but is still there is some things that we need to
3 research. And this is the conclusion by the-- you know, the
4 author, authors, I should say, that if it must be used, users
5 must be used in this kind of, you know, technology, with the--
6 you know, caution.

7 And the paper points out the-- all those factors
8 involved, say like room conditions, the psychological
9 condition of the speakers, and devices used for the submission
10 of the speech samples. There are so many, you know, factors
11 that will effect the performance of the speaker recognition no
12 matter what you use, whether by using, I think there are
13 three, four kinds. They talked about spectrograph, phonetic,
14 and then acoustic method. Last one is the automatic speaker
15 recognition method.

16 Whichever being utilized, the results of the
17 analysis should be carefully, you know, considered with
18 caution.

19 And then the-- although I am fully aware of all of
20 those authors. That is in my opinion, that is a good summary
21 of the, you know, scientific community for the speaker
22 recognition.

23 Q The caution that you are talking about, that is caution
24 in making conclusory assessments of a speaker comparison?

25 MR. STERN: Objection, leading.

1 THE COURT: Overruled.

2 A In my assessment, it simply means the technology is
3 useful tool to determine the, you know, the individual's
4 identity. But because of the, you know, certain amount of
5 unknown error rates, the users, when this case-- I don't think
6 the author is not talking about the Court but in general
7 users, should proceed with caution.

8 Q In terms of the technology that article was written in
9 2009, right?

10 A Yes.

11 Q And how has automated voice comparison technology
12 improved since 2009?

13 A Maybe right after then, article came about, there was one
14 incremental improvement in the performance, mainly due to the
15 new, article known as a vector and I-vector, new algorithms,
16 were utilized by many, you know participants.

17 And, many systems who participated in NIST speaker
18 recognition evaluation workshop ever since 2010, utilized,
19 I-vector algorithms.

20 And as I said before, the speaker recognition has
21 been evolving rapidly. But this breakthrough doesn't happen
22 overnight. The improvement has been incremental.

23 Last incremental-- last incremental improvement took
24 place in 2010 and it still advancing right now.

25 Q And the technology you talked about I-vector, is that the

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1 technology utilized in Batvox?

2 A I believe so.

3 MS. KELLMAN: Objection. Move to strike. He
4 doesn't know.

5 THE COURT: Do you know?

6 THE WITNESS: Yes, I do have that, you know software
7 and in fact, I know it uses I-vector.

8 Q And in terms of error rates, are you familiar with error
9 rates for Agnitio software? In addition to the NIST error
10 rates that we talked about before?

11 A I could talk about several error rates but I don't think
12 I am at liberty about the error rates --

13 Q Understood.

14 A -- in the in-house experiments.

15 Q Did you take a look at a report that the government
16 provided you, called Comparative biometric testing, round 7
17 public report?

18 A Yes.

19 Q Did that report contain error rates for Batvox or Agnitio
20 software?

21 A Agnitio software, yes.

22 Q And, the techniques that Mr. Lindh applied, the phonetic
23 analysis, would that improve the accuracy of Mr. Lindh's
24 conclusions if it were also was based on automatic voice
25 comparison?

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1 A I believe it would.

2 Q And, the acoustic analysis as a general matter would that
3 improve the conclusions related to automated voice comparison?

4 A Usually it depends upon the data itself and the
5 individual speakers. Sometimes it would, sometime it doesn't
6 and I do recall Mr. Lindh testifying it was-- it was not
7 improving it.

8 And, I think it-- my interpretation at that time was
9 probably those acoustic measurements were all in the average
10 range.

11 Q And was Mr. Lindh cautious in stating his conclusions
12 regarding his analysis?

13 MR. STERN: Objection.

14 THE COURT: Overruled.

15 A I think his conclusion is carefully phrased and as long
16 as he gives the, you know, the degree of, you know, his
17 certainty, I think he is exercising caution, enough caution.

18 And, in fact, the usage of the hypothesis itself,
19 indicates it is very cautious.

20 MR. ARIAIL: Nothing further, Your Honor.

21 THE COURT: All right. We will take 15 minutes.

22 (Recess taken.)

23 THE COURT: All right. The defendants are present,
24 along with all counsel.

25 The doctor is on the stand and is still under oath.

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1 Mr. Stern.

2 MR. STERN: Judge, having talked to my co-counsel, I
3 don't think we can meaningfully do this examination without
4 talking to our expert. There has been a lot of expert
5 testimony adduced here. I'm not equipped myself to understand
6 and question. I need to talk to an expert before I can
7 meaningfully cross examine.

8 THE COURT: How long do you need?

9 MR. STERN: He is in Denver.

10 THE COURT: How long do you need?

11 MR. STERN: I think we can do it on Monday.

12 MR. ARIAIL: I have to talk to Doctor Nakasone.

13 THE COURT: All right.

14 MR. ARIAIL: What does your schedule look like?

15 THE WITNESS: When?

16 MR. STERN: I don't-- you can do this at the side.

17 THE WITNESS: I have duties, Monday.

18 (Off record conversation.)

19 MR. STERN: What date is good for Doctor Nakasone, I
20 don't want to inconvenience him.

21 THE WITNESS: I think the best day would be today.

22 MR. ARIAIL: I think he is fairly --

23 THE COURT: How about the second best day.

24 MR. STERN: A day next week.

25 THE WITNESS: Next week except Monday.

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1 MR. STERN: Whatever day is good for Your Honor or
2 the government, I will make myself available.

3 MR. ARIAIL: I might suggest, Your Honor, that we
4 start the cross examination today, and to the extent that
5 defense counsel has additional information they want.

6 THE COURT: We can do that.

7 MR. STERN: The reason that is not--

8 THE COURT: Well, you can start today about what you
9 are knowledgeable about, then you have time. I have given the
10 government a lot of leeway and I understand that. But, it is
11 for my purposes to.

12 MR. STERN: It is not the way cross examination
13 works. That is an integrated examination.

14 THE COURT: You may begin today and then talk to
15 your expert.

16 MR. STERN: I am asking you not to make me. I don't
17 think it will be an effective cross examination.

18 THE COURT: We have him here and then you have an
19 opportunity to come back.

20 MR. STERN: So I take it you are directing me to do
21 it.

22 THE COURT: Yes.

23 MR. ARIAIL: Your Honor, just in terms of the
24 record, obviously the discovery that we turned over, we turned
25 it over two weeks ago, Your Honor. They have had these

Nakasone - Cross - Stern

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1 materials and the expert has reviewed them in the mean
2 while --

3 MR. STERN: I'm not complaining about the discovery
4 if that is an issue.

5 THE COURT: All right. Please get started.

6 CROSS EXAMINATION BY MR. STERN:

7 Q Doctor Nakasone, were you ever supportive of
8 spectrography?

9 A Yes, I was.

10 Q When was that?

11 A Starting from 1977 all the way up to 1994, maybe.

12 Q During that period of time, did you ever testify in
13 support of spectrography as a mechanism for gathering evidence
14 presenting it in court?

15 A Yes, I have.

16 Q When you were doing that, you weren't a charlatan, were
17 you?

18 A No.

19 Q You weren't doing something dishonest?

20 A No.

21 Q You were doing what you thought was scientifically
22 appropriate at that time?

23 A That's correct.

24 Q And then later you came to the conclusion that you were
25 wrong?

1 A I don't know why you asking me that question.

2 Q Well, did you ever testify in court, that spectrography
3 was not a way of conclusively distinguishing one person from
4 another?

5 A Okay. Let me answer the question in you know-- what
6 happened in reality when I testified in 1986 so --

7 Q I'm not being rude, I'm listening, I left something on my
8 table. Go ahead.

9 A Okay. I had a pretty good knowledge about the
10 interpretive in respect to spectrograms because of my training
11 in phonetics and Physics and Mathematics.

12 So I knew what I was doing and I testified in the
13 7th Circuit in Chicago for the, you know, the United States
14 Attorney, Assistant United States Attorney.

15 And, I testified for the results of analysis and
16 originally I was requested to testify to the reliability of
17 the technology, but primarily examiner who was supposed to
18 testify in that case, could not make it because of, you know,
19 medical reasons. And I was requested to evaluate and then do
20 a comparison, actually.

21 I testified, and my testimony was, admitted during
22 Frye test.

23 Q During -- what was that word?

24 A During Frye test.

25 Q A Frye?

1 A My testimony was admitted in 1986. And a couple of years
2 later, it was upheld in the appellate court.

3 Now, that was my testimony. However though, the
4 technology must be practiced by many other colleagues of mine,
5 I guess.

6 And over time, I testified several times to lay the
7 foundation for other spectrographic individuals, I mean
8 analysts. But, after finding out so many inconsistencies in
9 their analyses, my, you know, confidence in this technology is
10 ubiquitous to, I started to have some sort of disappointment
11 because-- my confidence in this technology eroded it.

12 Q Eroded?

13 A Erode it.

14 So, that was the, you know, my experience about
15 spectrograms.

16 Q It didn't turn out to be as good as you thought it was.

17 A That's correct.

18 Q Now, you have heard of a phenomena called, cognitive
19 bias, haven't you?

20 A Yes.

21 Q And, in the F.B.I., when you do voice identification
22 work, you do things to try to avoid the problem of cognitive
23 bias, don't you?

24 A We do best we can.

25 Q And what is the best you can, what is it that you do?

1 A Okay. First of all, when we do, you know analysis, it is
2 a built in practice that no single examiner's conclusion would
3 go out, unless it is confirmed by second qualified examiner.

4 Q Why is that?

5 A Well, this will-- this is implemented as a safeguard
6 against, you know, potential error that, you know, primary
7 examiner would make whether or not it is his competence or
8 some sort of--

9 Q I'm sorry, the last word?

10 A Incompetence.

11 Q Incompetence. Yes?

12 A Whether or not it was caused by incompetence or caused by
13 uncontrollable bias. But they develop the safeguard we apply.

14 And, now days, we also, you know implement, you know
15 secondary-- I mean, you know, the secondary examiner has to be
16 kept away from the primary examiner until the primary-- the
17 examiner finishes his or her exam.

18 And results would be hidden and only, you know,
19 relevant materials would be passed on to, you know, secondary
20 examiner and do examine and issue his or her conclusions
21 completely separate from the primary. Separate from the
22 primary examiners.

23 So, we are fully aware of the existence of cognitive
24 bias but we never know how successful we are.

25 Q You have, don't you in the F.B.I. standard operating

1 procedures. Not the F.B.I., I'm sorry, your organization,
2 standard operating procedures for how things should be done.

3 A Well, every exam we do, not only for speaker recognition,
4 you know examinations, is-- we have standard operating
5 procedures written. So, speaker recognition examination also
6 has, you know, SOP.

7 Q Your standard operating procedures, you have a specific
8 section, 6.12, that controls the use of this second opinion;
9 is that right?

10 A Can I look at-- I don't remember exact section numbers.

11 Q 3500-HN-1.

12 A Okay.

13 MR. ARIAIL: He doesn't have a copy.

14 MR. STERN: I will get a copy from one of my
15 colleagues and give it to you.

16 MR. ARIAIL: I think it is 3500-HN-3.

17 MR. STERN: Is this it?

18 MR. ARIAIL: Yes.

19 MR. STERN: Mine is HN-1.

20 For some reason we have different numbers for them.
21 The HN-1 that I have, HN-3 that the government has, are the
22 same document. I'm not sure how that happened. Anyway that
23 is the fact of it.

24 Q Doctor Nakasone, I will show you this document, you tell
25 me if you recognize what-- may I approach, Judge?

1 THE COURT: Yes, you may.

2 Q You tell me if you recognize what it is.

3 A Yes, I recognize it. It is table of decision.

4 Q What is the part below it, 6.12?

5 A 6.12. Second opinion.

6 Q Why don't you read that-- what are those, are those the
7 standard operating procedures that --

8 A It is part of it. Yes.

9 Q Portion of it?

10 A Yes.

11 Q Read section 1.-- 6.12 and 6.121.

12 A Second opinion, a second opinion by another qualified
13 voice comparison examiner must be obtained for all decisions
14 in the table of fused decision, including inconclusive
15 results.

16 Q What is the table of fused decisions?

17 A This table indicates rules of fusion of machine based
18 results and human based results.

19 And it encompasses from match, no match,
20 inconclusive, probable match, probable no match.

21 Q So that chart would be used if two examiners came up with
22 different results?

23 A No. This table is meant to fuse, the final examiner's
24 perceptual results with the results coming from the computer.

25 (Transcript continues on next page.)

1 BY MR. STERN: (Continuing)

2 Q I see. Okay. Now if you would, read 6.121.

3 First tell me what it's about and then read it if
4 you would.

5 A 6.121. The second opinion process must be completely
6 independent of first examiner's decision and the first
7 examiner should not provide any oral or written information
8 about his or her final decisions. However, the first examiner
9 must provide their case notes to include a list of recognition
10 algorithms, control groups, control speaker models, UBMs, and
11 result in scores for the second examiner to review.

12 Q Now, that is a mechanism for trying at least to avoid
13 cognitive bias, right?

14 A That is correct.

15 Q And the rules that you have in your standard operating
16 procedures are important to the efficient functioning, the
17 accurate functioning of the work you do, isn't it?

18 A That's correct.

19 Q Okay. Now, you talked about Dr. Lindh's report at some
20 length here, haven't you?

21 A Today, yes.

22 Q Yes, today. And you said, I think, that you don't speak
23 Swedish. Is that correct?

24 A That's correct.

25 Q And that while you know some phonetics, you're not an

1 expert in phonetics?

2 A That's correct.

3 Q And I think you also said that the FBI didn't have on
4 staff at least a person who speaks Swedish and knows
5 phonetics, is that right?

6 A That's correct.

7 Q So do you know whether or not Dr. Lindh's phonetic
8 analysis is accurate?

9 A I simply know that if he's, you know, a phonetician, it
10 would add value to the final conclusions, but assessing his
11 competency of his phonetic knowledge really does not belong to
12 me. I don't know.

13 Q It doesn't belong to you because you can't do it, right?

14 A Yes, because I don't speak his language and I have never
15 worked with him. Only thing that I can assess his competency
16 is by reading his approach and a thorough documentation what
17 he does, but I do not know.

18 So, since I do not know his, you know, characters or
19 his reputations, I contacted three individuals who are in the
20 same field. The first one was Dr. Jos, J-O-S, Bouten who is
21 the scientist at the Netherland Forensic Institute. In
22 person, I asked him if he was aware of a Mr. Lindh and he said
23 yes. And I said, I asked is he good or bad. And his answer
24 was he is highly reputable.

25 MS. KELLMAN: Objection to some other scientist.

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1 THE COURT: Overruled. I mean, it's a question
2 asked by defense counsel.

3 MR. STERN: Well, it's not really the question asked
4 by defense counsel. My question was whether or not he
5 himself --

6 MR. ARIAIL: Your Honor, he should be allowed to
7 finish his testimony.

8 THE COURT: No. Wait.

9 MR. STERN: I think that --

10 THE COURT: Wait a minute. Two people cannot talk
11 at one time. I mean she can't do it.

12 I'll allow you to answer.

13 THE WITNESS: Thank you, Your Honor.

14 THE COURT: Yes.

15 A Well, I did that because realistically speaking, I can't
16 judge other, you know, phoneticians', you know, integrity and
17 competencies unless I talk to somebody I trust. So, Dr. Jos
18 Bouten of Netherland Forensic Institute mentioned to me they
19 know each other well and that he's highly reputable forensic,
20 you know, phoneticians.

21 Okay. So, I contacted second person who was
22 Dr. Michael Jessen of the German forensic laboratory BKA. He
23 also mentioned to me that he knows Mr. Lindh well and he's a
24 good, you know, phonetician. All right. These European
25 opinion.

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Nakasone - cross - Stern

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1 So, I contacted the leading phonetic, you know,
2 speaker recognition in the United States of America. Her name
3 is Ms. Eva Shwartz, E-V-A, S-H-W-A-R-T-Z. And she also echoed
4 a similar response about Mr. Lindh.

5 I think this is, you know, it may be hearsay, but
6 usually when a scientist want to know other scientist
7 reputations, that's the only way we can assess.

8 Q Well, did you talk to anyone who checked his work on this
9 case?

10 A That -- I thought that's why I was reading his report.

11 Q Well, you don't speak Swedish.

12 A Oh.

13 Q And you don't do phonetics. Fair to say?

14 A Right.

15 Q So you didn't check his work on whether or not the
16 Swedish phonetics he applied in this case was accurate or
17 inaccurate, did you?

18 A No, I did not, and that was not the, you know, I was
19 request to do.

20 Q So did you talk to anyone who checked those things in
21 this case?

22 A No, I did not.

23 Q Did he have a second person like you have in your shop,
24 your organization, do it independently from him so you could
25 see if the results came out the same?

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Nakasone - cross - Stern

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1 A I was here during his, you know, examination, I mean,
2 testimony yesterday. I do recall he mentioned that there are
3 two persons in Sweden who does speaker recognition and he's
4 the only one who was certified by NFC. I think that's how it
5 was spelled, NFC. National Forensic Center in Sweden. So
6 this means that probably he cannot afford to have a second
7 examiner except he has, he also testified that he had Carly
8 working in his laboratory.

9 Q Well, that wasn't independent, was it? That was someone
10 working with him?

11 A Okay. If he was, the second person is equally qualified
12 as he is regardless of where he works, I think this person can
13 be qualified as a second examiner according to our, you know,
14 protocol, our regulations or our rules, I should say, but if
15 he was not qualified, no matter where he is, he can't function
16 as a second examiner. So I don't know.

17 Q Well, your rules say that one shouldn't know anything
18 about what the other is doing, don't they?

19 A Except, you know, processing, but, yes, this decision
20 shouldn't be known to the other.

21 Q So two people working together are not the same as that,
22 are they?

23 A If there's a rule. I mean, you know, even, you know, in
24 our environment, most examiners, you know, sometimes work in
25 the same environment but they can hide their conclusions in a

1 computer.

2 Q Did you hear any testimony that these two were hiding
3 their conclusions from one another?

4 A During his testimony?

5 Q Yes.

6 A I think I missed it.

7 Q Yes, I think I did too.

8 Did you hear them say we were keeping secret from
9 each other what our conclusions were, what our thoughts were,
10 what we were doing?

11 A If he said it, I didn't hear it. I don't know.

12 Q So the answer is no, you did not hear that?

13 A I don't remember. Maybe not.

14 Q As a matter of fact, what you heard is that they've
15 worked together, that one of the people was not a forensic
16 voice examination person, he was just a phoneticist, and that
17 they discussed what they were doing as they worked on it,
18 isn't that what you heard?

19 A That may not be qualified as a second examiner.

20 Q If that's what happened --

21 A That may be team members.

22 Q Team members, right. Not a second examiner?

23 A No.

24 Q Okay. Now, you have some knowledge about mismatched
25 speaking styles, right?

Nakasone - cross - Stern

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1 A I think I spoke about it elsewhere, yes.

2 Q And it's difficult to compare mismatched speaking styles,
3 isn't it?

4 A Yes. It also depends upon degree of a mismatch. We know
5 that, we can't really compare red speech sample well
6 against --

7 Q I'm sorry. What is the word?

8 A Red speech.

9 Q Red, R-E-D?

10 A Red speech against the element of speech or rapidly going
11 conversational speech.

12 Q Yes, as a matter of fact, you believe, don't you, that in
13 regard to speaker style, rapid speech, mismatched speaking
14 styles are insufficient for use in analysis, that's what you
15 believe, isn't it?

16 A It depends upon who, which voice you are comparing
17 against, yes. If both are rapidly speaking, then that's okay,
18 but one is very monotonous in a slow rate for unknown reasons
19 and the other one is rapid talker and it could be, sometime it
20 could be due to the, you know, speaking characteristics of the
21 individuals but ideally, you know, both speech samples from
22 unknown and known should be spoken reasonably in a similar
23 conditions and speaking style.

24 Q So both are red. That would be okay, right?

25 A Yes.

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Nakasone - cross - Stern

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1 Q If both are normal conversation, that would be all right?

2 A That would be okay.

3 Q But would pose difficulties if one were red and one were
4 normal conversation?

5 A We do observe some degree of degradation in the results
6 of the comparisons if one voice is, you know, red and the
7 other is rapid exchange in the conversation. Usually we
8 prefer to compare conversation against conversation.

9 Q It would fairly state your opinion to say in those
10 mismatched styles, they are insufficient for use and analysis;
11 would that fairly state your opinion?

12 A This is kind of, you know, a caution area for the
13 examiners, if the, you know, conversational speech is provided
14 to represent, you know, unknown voice or incriminating voice,
15 we have to compare against, say, interviewing the voice or red
16 speech.

17 We have to assess by using our experience whether or
18 not we should go ahead and compare or we may note the
19 difference is too drastic and then we may say, okay, it's not
20 doable. It's a judgment call sometime because not everybody
21 reads things completely different way from normal
22 conversation. That's kind -- that's got to be decided by
23 human forensic examiner.

24 Q Dr. Nakasone, on April 17, 2015, you spoke with an agent,
25 didn't you, named Stefanie Roddy?

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1 A Yes. I think there were many, I mean, a few individuals.

2 Q Do you know who they were?

3 A I think they were in New York.

4 Q No, not where they were, who they were?

5 A I -- okay. Ms. Salick was there and Mister, you know,
6 Ariail was there and I couldn't tell whether it was, you know,
7 Agent Mary was there or Stefanie Roddy. We never met before.
8 Wait a minute. Did we meet? Was it after we met? I'm sorry.

9 Okay. September? Okay. March 13th, we had a face-to-face
10 meeting.

11 Q You know what? I'm sorry. I gave you the wrong date.

12 A Yes. I can't recall everything.

13 Q Dr. Nakasone, I gave you the wrong date. It's April 10th
14 of 2015. I said the 17th but I was wrong.

15 A Okay. Thank you.

16 Q So on the 10th, did you meet with this group of people
17 you're talking about?

18 A I never met, but we had teleconference, I think,
19 telephone conference.

20 Q A teleconference?

21 A Teleconference.

22 Q And in that teleconference, you were preparing to come
23 and work on this case, weren't you?

24 A I was talking with them about the results of my quality
25 evaluation of the evidentiary audio files.

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1 Q Well, you talked about more than that, didn't you?

2 A If you can remind me what I talked about, maybe I can
3 confirm what I've remember.

4 Q I can fairly assume, can't I, that everything you told
5 them was the truth?

6 A Of course.

7 Q And didn't you tell them that in regard to speaker style,
8 for example, rapid speech, mismatched speaking styles are
9 insufficient for use in analysis? Did you tell them that or
10 not?

11 A I mentioned not in exactly the same way but let me just
12 try to remember, you know, in what context I spoke about it.
13 There was, at one particular -- there was three particular
14 recordings and that individual was speaking, it was known
15 voice samples was speaking as if he were just, he just woke up
16 or lying on his back for a long time.

17 Q I'm not asking you about the specific situation. I'm
18 asking you did you make that statement in regard to speaker
19 style, for example, rapid speech, mismatched speaking styles
20 are insufficient for use in analysis. Did you make that
21 statement?

22 MR. ARIAIL: Objection, Your Honor. He was
23 answering the question.

24 A Not exactly the same way because if one was -- if one is,
25 you know, using a different speaking style against the voice

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1 which supposed to be compare and then this kind of comparison
2 will not produce a meaningful result, but if both of them, the
3 question voice and known, both are rapidly, you know, engaged
4 in the speaking mode, the comparison would be okay.

5 Q I'm going to read this to you again. I'm going to focus
6 on the word "mismatched" which is what you're talking about,
7 okay?

8 A Okay.

9 Q Is this your statement? In regard to speaker style, for
10 example rapid speech, mismatched speaking styles are
11 insufficient for use in analysis. Is that your statement?

12 MR. ARIAIL: Objection, Your Honor. I think this is
13 a report he's referring to. Dr. Nakasone had never seen this
14 report. I think it would be appropriate to refresh his
15 recollection with a report given that he stated that he
16 doesn't remember exactly what he said, but --

17 MR. STERN: I'm asking --

18 THE COURT: Wait a minute.

19 Can you answer that question, is that your
20 statement? Can you answer?

21 A Okay. I do recall that I -- well, it's kind of, you
22 know, my belief too. Speaking style mismatch would cause
23 higher error rates.

24 Q Higher error rates?

25 A I didn't say -- I don't remember calling it insufficient,

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1 but it tends to produce higher error rates.

2 Q Let me show you this document then and see if that
3 refreshes your recollection.

4 MR. STERN: May I approach, Judge?

5 THE COURT: Yes.

6 Q Starting here to here.

7 THE COURT: What is this? Is this his report?

8 MR. ARIAIL: Your Honor --

9 MR. STERN: It's a 302 that I take it an agent wrote
10 reporting what he said to them.

11 MR. ARIAIL: It might be helpful to note for the
12 record what the 3500 number is.

13 MR. STERN: That's not the front page. I'll tell
14 you in one second.

15 It's 3500HN-19.

16 THE COURT: HN-19?

17 MR. STERN: Yes.

18 THE COURT: Okay.

19 A Okay. This is notes taken by maybe special agent or
20 somebody on the other side and it is, you know, reasonable
21 representation of my belief.

22 Q Okay.

23 A Would that suffice?

24 Q That will suffice.

25 A It's a reasonable representation of my belief.

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1 Q Okay. Thank you.

2 MR. STERN: Judge, can I have one moment, please?

3 THE COURT: Yes.

4 (Pause.)

5 MR. STERN: Thank you.

6 Q Now, you've talked about OSAC.

7 I'm sorry. Are you ready?

8 A Yes, Mr. Stern. I'm ready.

9 Q You've talked about OSAC, right?

10 A Yes.

11 Q And tell me again what the committee you're on, if that's
12 the right word for it, is doing?

13 A I'm on committee for, I mean, subcommittee of the speaker
14 recognition. And the OSAC, you know, structurally, has maybe
15 approximately 24 individual subcommittees and speaker
16 recognition subcommittee is pledged under digital multimedia
17 scientific working, you know, committee and then four of those
18 subcommittees.

19 Speaker recognition is one of them, facial
20 recognition is another and image analysis is another and then
21 we have a digital evidence section as well. Other sections
22 will contain DNA, fingerprints, block analysis, chemistry
23 analysis, and speaker recognition is just, you know, a brand
24 new discipline within this, you know, large organization of
25 the forensic science disciplines in the United States.

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1 Q But what's the goal of the committee you're on in OSAC?
2 What are you trying to accomplish?

3 A Our main goal is to, you know, strengthen the forensic
4 scientists in the United States of America and then the
5 individualized, you know, goals and objectives depends on each
6 subcommittee because each subcommittee has a different
7 experience and level of, you know, level of the strength of
8 the, you know, value of that, you know, subcommittees.

9 So, if I concentrate on speaker recognition
10 subcommittee, our goal is to establish the consensus-based
11 standards guidelines, the specifications for the collection of
12 the audio or samples in the transmissions over telephone and
13 also establishing, you know, standardized guidelines, what's
14 best practice to conduct speaker recognition by using
15 automatic speaker recognition algorithms as well as by
16 utilizing phonetics approach.

17 Q So that's -- I'm sorry.

18 A And of course, you know, subcommittee has, you know,
19 other functions. We recently, the committee -- I mean, the
20 community recently established the first national standards
21 for voice transmissions and that standards is called the type
22 11 which is part of the larger, you know, standards currently
23 available in the United States of America and that is known
24 as, okay, ANSI NIST, American National Standards
25 Institute/National Institute of Standards and Technology.

1 They have this, you know, huge responsibility to
2 establish transaction standards for all biometrics including
3 from fingerprints, DNA, eyelids, face, and just recently the
4 community established first national standards to transact
5 audio informations and within this OSAC subcommittee for
6 speaker recognition, we have a task group to, you know,
7 produce best practice, you know, how to implement that into
8 each local state and local agencies so that, you know,
9 transaction will be standardized across communities.

10 (Continued on next page.)

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1 CROSS EXAMINATION BY MR. STERN:

2 Q Talking specifically about voice identification.

3 A Yes.

4 Q Why is it useful or important to do that, have the
5 standardized widely accepted guidelines?

6 A So that there would be a uniform way of analyzing and
7 transmitting, exchanging data between multiple agencies.

8 Q And is it also to be sure that testing is done in a way
9 that it can be checked, that is, people are qualified, that is
10 given certifications of some kind, their labs have the
11 appropriate equipment? You talked about for example, bad
12 testing or something. I don't remember the exact word that
13 you used?

14 A Yeah, that would be -- come later. But this voice
15 transaction standards was not meant for research purpose. It
16 is operational.

17 This-- that transaction is written for actual
18 exchange of the voice data between organizations.

19 Q By that you mean how people give one piece, if I use the
20 word "evidence", to another person or organization?

21 A That's correct.

22 Q But are the guidelines yet done for how testing should be
23 carried out?

24 A Yeah, guidelines has been established. It has been
25 published December of 2013. And then this task group within

1 the OSAC, you know, subcommittee for speaker recognition now,
2 testing it and then they are going to establish now,
3 guidelines. And I think they are charged to finish that up,
4 sometime in January of 2016.

5 Q But it is not done quite yet?

6 A Not yet.

7 Q Okay.

8 Now, are you familiar with the process called
9 accreditation?

10 A Yes, I am to certain extent.

11 Q What is accreditation?

12 A Accreditation is, you know, organizational line of
13 process and there is an -- F.B.I. is under accreditation
14 program under the ASCLB, American Society of Crime Lab
15 Directors. Also it has component in it, known as lab or
16 laboratory accreditation board, in conjunction with the ISO
17 17,025, and the voice or speaker recognition program resides
18 within forensic audio, video and imaging analysis and then
19 within this evidence section.

20 Now, as a group, operational technology established
21 this evidence section and the entire digital evidence
22 laboratory of the ODT was going through accreditation process
23 and generally 2007, well, we were accredited by ASCLB.

24 Then I'm not sure if that is available in Europe or
25 elsewhere. But accreditation, that is not really certified

1 individual examiners in any disciplines. It is simply
2 accredits laboratory procedures and logistics and also quality
3 controls. It does not accredit individual examiners.

4 Q By quality controls, what do you mean?

5 A Quality control means, there are lots of protocols. We
6 have to be, you know, careful about, say like how we should
7 maintain chain of custody of the evidence.

8 And how we are going to write reports and what we
9 need to do with the evidence once examination is done. What,
10 you know, evidence can be kept indefinitely and what evidence
11 must be returned to the contributor and what evidence must be
12 purged immediately.

13 Q So when a laboratory is accredited, you have some kind
14 of, I don't know about assurances, but at least hope that they
15 follow all those kinds of rules you were just discussing?

16 A That's correct.

17 And also, thanks-- I mean due to this, you know
18 accreditation process, we have, you know, standard operating
19 group procedures, to write standard operating procedures so
20 that there will be uniformity within the same laboratory.

21 Q Do you allow each laboratory to write their own
22 protocols?

23 A They have to write their own standard operating
24 procedures. But, that, you know, format, must be in
25 compliance with the, you know, regulations established by this

1 manuals.

2 Q Is that the same as a template for how a report should be
3 prepared, are those two things the same?

4 A You are referring to standard operating procedures?

5 Q Ah-hum.

6 A No. Standard operating procedures is not really step by
7 step, you know. Dictated type of statement. It is general,
8 it is a flow of the examinations.

9 Q The flow?

10 A Yeah.

11 What flow of the examinations. Say like what tool
12 is approved by the F.B.I. and what examiner has to do first.
13 Followed by what and how, you know, assessment will be done
14 and what kind of, you know, safety guard must be implemented.
15 An examiner is expected to follow that, standard operating
16 procedure as much as they can.

17 Q Okay.

18 Now, you talked at some length about Mr. Lindh's
19 report, do you recall that I assume?

20 A Yes, I do.

21 Q And, you talked about a number of things he did. I want
22 to try to find out from you, whether or not you think those
23 things played a role in his decision making. Okay.

24 So first of all, he did phonemic and morphemic
25 lexical analysis. That did play a role in his decision

1 making, right?

2 A I hope so.

3 Q And then you talked about intonation and speech rhythm,
4 do you recall that, don't you?

5 A Yes.

6 Q And, there were no distinct rhythm features discovered,
7 right?

8 A I don't recall, I'm sorry.

9 You mean in his report?

10 Q His report, yes, that is what I mean.

11 Well, do you remember this report at all, or do you
12 have to have it in front of you to talk about it?

13 A I rather want to have it in front of me, sir.

14 MR. STERN: I'm sorry, my report is marked up. If
15 you can ignore my marks on it.

16 MS. KELLMAN: Maybe the government has a copy.

17 MR. ARIAIL: I'm looking. We have given many of
18 ours away.

19 (Pause.)

20 MS. KELLMAN: If the government is out of copies,
21 Judge, perhaps we can take a 10-minute break and get a clean
22 copy. I didn't know--

23 THE COURT: Will we need a 10-minute break?

24 MR. ARIAIL: Your Honor, I think if you give me a
25 second, we can get a copy.

1 THE COURT: All right.

2 (Pause.)

3 MR. ARIAIL: I will hand the witness 3500-JL-56,
4 Your Honor.

5 THE WITNESS: Thank you.

6 Q So if you will go to page ten, please.

7 A Okay. I'm here.

8 Q You see a section 3.2.3, that's entitled intonation and
9 speech rhythm?

10 A Okay.

11 Q It says, no distinct rhythmic features were discovered,
12 right?

13 A Yes. I see that.

14 Q And it says, the obvious similarities still give some
15 support of the hypothesis compared to the alternative
16 hypothesis, do you see that?

17 A Yes.

18 Q Now, can you tell me, how if there are no distinctive
19 rhythmic features, they can support either hypothesis?

20 A I think what he means, and my understanding is that no
21 support means, he really cannot, you know, get any
22 deterministic information to tell the source of-- the source
23 of the message. He is not supporting all hypothesis, nor
24 alternate hypothesis.

25 Q So when he says, it still gives some support for the

1 hypothesis compared to the alternate hypothesis, you think he
2 doesn't really mean that?

3 A He-- okay what he meant is that--

4 MS. KELLMAN: Objection to what somebody meant, Your
5 Honor.

6 THE COURT: Overruled.

7 A He reached inconclusive results. But it does-- it has
8 really nothing to do with the usefulness of the analysis. He
9 simply indicated he did, but it was kind of a ball park, fell
10 in the average zone. So he can't really use it.

11 Q So it really had no meaning, that particular analysis of
12 intonation and speech rhythm?

13 A Right.

14 Q And then, there was voice quality, which you talked about
15 some, right?

16 A Yes, I did.

17 Q And there were no dissimilarities supporting any
18 alternative hypotheses, right?

19 A I see it, yes.

20 Q But it also didn't support the hypothesis?

21 A That's correct.

22 Q That is, it could have been the 5'10" person you talked
23 about or the, I think you said 1200 hertz, I might have the
24 number wrong, but the average voice?

25 A Yes, 120 hertz. Yes, very much average.

1 Q So someone with the-- the fact somebody has an average
2 voice can neither support the alternative hypothesis or the
3 hypothesis, right?

4 A That is correct. And that happens when we listen to
5 individuals behind doors. We cannot see them. But somehow
6 these two individuals have same vocal quality. Okay. The
7 voice quality means what quality. Like, you know, I have my
8 own tones and you know anybody can kind of tell my name. And
9 you have your own.

10 So this is the-- vocal cord is something we listen
11 to, and assess his overall, you know, voice quality. It is
12 not-- it is kind of unique characteristics of his voice. He
13 simply saying he cannot tell whether they are the same voice
14 or they are different voices. So, no.

15 Q No help to him in reaching his ultimate conclusion?

16 A Correct.

17 Q Then let's go to 3.3.1 articulation rate.

18 A Yes.

19 Q And, that too, if you go to page 11, gave him no support
20 for any hypothesis?

21 A Yes. I see that.

22 Q So that also was no help to him in reaching any
23 conclusion in this case?

24 A Yes, that's correct.

25 Q And, next he has the fundamental frequency rate, do you

1 see that, 3.3.2?

2 A Yes.

3 Q And, that also has no support for any hypothesis, right?

4 A Yes, that's correct.

5 Q So that was no help to him in reaching his ultimate
6 conclusion?

7 A Yes.

8 May I inject something? Or no.

9 Q No.

10 A Okay.

11 Q Then there is 3.3.3 entitled format frequency analysis,
12 right?

13 A Yes.

14 Q And, as hypothesis one, he says, though it has the
15 highest range of support for hypothesis one, the range of
16 scores gives no distinct support, right?

17 A Correct.

18 Q And for hypothesis two, he says, there is no support for
19 any hypothesis because of, I-- due to audio quality. I assume
20 that means poor audio quality; is that right?

21 A Okay.

22 Q And, number three, no support for any hypothesis, also,
23 right?

24 A Okay.

25 Q And so format frequency also was no real use to him in

1 reaching his conclusion, is that fair to say?

2 A Yes, that's-- his decisions by using those.

3 Q So, really, the entire decision he made in this case, was
4 based on the myometric statistical comparison of voices and on
5 his lexical analysis of the morphemic and I will say it wrong,
6 so I will read it, phonetic and linguistic analysis. He calls
7 it phonetic and linguistic analysis. That and the biometric
8 analysis are the only two things he relied on in reaching his
9 conclusion, is that also fair to say?

10 A In the end. But in the process, he used three of those.
11 And one of them turns out to be very small weight given. But
12 I do not discard the fact that he was using all of those.

13 Q When you say, he was using all of those.

14 A Acoustic, phonetic and automatic.

15 Q For each of those, he says, no support, doesn't he?

16 A Yes, no support means he reached nothing conclusive. But
17 the fact he did, tells that he is using-- he is exhausting
18 every means available to him.

19 And, I think it is a good practice, and by looking
20 at the-- his fundamental frequency chart, and by looking at
21 that, the fundamental frequency chart, provides the
22 appearances that two people involved in this, by looking at
23 fundamental frequency.

24 Q There are two?

25 A Two.

1 But the fact that he concluded, inconclusive,
2 indicates he knows what he is doing. Meaning that this kind
3 of small variation shouldn't be regarded as a, you know,
4 distinctive two voices.

5 So, this is sort of, you know, another way of
6 assessing how careful he is. That's all.

7 Q By all the things he did, that ended up not providing any
8 support?

9 A That is correct too.

10 (Transcript continues on next page.)

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Nakasone - cross - Stern

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1 BY MR. STERN: (Continued)

2 Q Is it fair to say that in doing this, he appears to have
3 no doubt on Somali-speaking Swedish people at least as far as
4 articulation?

5 A Yes.

6 Q Okay. Now, the FBI has an official position when it
7 comes to speaking in court, don't they, testifying in court?

8 A Yes, they do.

9 Q And when you testified in the Zimmerman case in 2013, has
10 the technology gotten so much better that you've changed your
11 opinion on whether or not people working for the FBI should
12 testify in court?

13 A In 2013, no. I think the one incremental, you know,
14 improvement took place in 2010 so in 2013, we were still
15 riding on the same trend.

16 Q Your opinion was the same as it is today?

17 A That's correct.

18 Q An is it your opinion that even after doing biometric and
19 human analysis, that you're still a couple of years away and
20 that there's a long way to go before the system is ready to
21 render its opinions in the courtroom?

22 Is that your opinion as you sit here now?

23 A That's my opinion with a caveat. If I may speak about
24 the caveat.

25 Q Well, for now, I'm just asking is that your opinion.

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Nakasone - cross - Stern

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1 A Largely, it states it's my opinions but there's a "but."

2 Q I guess you're determined to tell me the "but" so you
3 might as well.

4 A Yes. The -- I think the community believes --

5 Q I'm sorry. I didn't understand the second word you said.
6 The community?

7 A The community, the community composed of scientists,
8 engineers who formed this speaker recognition area believes
9 that, you know, technology has come a long way and we have, we
10 recognize that there has been, you know, notable, you know,
11 maturity in the technology, however, there are so, you know,
12 inconsistent practices among the scientists because we've been
13 sort of isolated, not because, you know, research activity was
14 kind of, you know, dormant or anemic, but it has been quite,
15 you know, hot. However, we feel would need to establish
16 standards and guidelines and I believe at least it would take
17 a couple of years or so, at least a few years or so.

18 In my opinions, not representing my, you know,
19 subcommittee of in OSAC, in my opinion, if something good
20 comes along, I think it's reasonable to, you know, provide,
21 you know, that, you know, technology would provide support of
22 the, you know, the investigators and also in a court and then
23 the factfinders by introducing this in evidence and this, you
24 know, condition must be clarified, of course. This testimony
25 of speaker recognition, if done appropriately, should be

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Nakasone - cross - Stern

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1 utilized in corroboration with other evidence and should be
2 taken under, you know, very, abundant, you know, cautions
3 about your potential or limited error rates.

4 Q Well, I'm going to read you something from your standard
5 operating procedures and you tell me if I'm reading it correctly.
6 Okay?

7 A Sure.

8 Q And those are dated September 15, 2014. Right?

9 MR. ARIAIL: Objection.

10 THE COURT: Yes.

11 MR. ARIAIL: I don't know if he has the standard
12 operating procedure in front of him.

13 MR. STERN: He doesn't. I'm going to read it and
14 ask him if it's true or not.

15 THE COURT: Do you have it or do you need it?

16 THE WITNESS: I don't know what he has.

17 THE COURT: Standard operating procedures.

18 MR. STERN: It's HN-1. You know what I'll do? If I
19 can read it and then hand it to him because I only have my copy.

20 Q So I'll read it and then hand it to you. Okay?

21 MR. ARIAIL: I have a copy.

22 A I don't know if you're talking -- September 15, 2014?

23 MR. ARIAIL: I have a copy, Your Honor. I'll
24 provide to the witness.

25 THE WITNESS: Oh, that must be the same copy that

1 FBI released.

2 MR. ARIAIL: Yes, for purposes --

3 THE WITNESS: And this is the date signed off by the
4 unit chief.

5 MR. ARIAIL: It's the copy that was released by the FBI.

6 Q Okay. I don't know of any of that, but this is your
7 standard operating procedures, right?

8 A Yes. You said operational technology divisions. Yes, I
9 was involved in the development of this standard operating
10 procedure. Yes, I know what you're talking about.

11 Q Okay. These are still the operating procedures you
12 operate under, is that right?

13 A That is correct.

14 Q All right. And these are from, this particular copy,
15 anyway, is from September 15, 2014.

16 A Yes.

17 Q And there's a specific section entitled, Limitations.
18 It's section four. Is that right?

19 A That's correct.

20 Q And I'm going to read it to you and you tell me if I read
21 it accurately or not.

22 Voice comparison examinations by the automatic
23 method -- which is like, what, Batvox?

24 A No, sir.

25 Q What is the automatic method?

Nakasone - cross - Stern

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1 A We have our own and I am not limited --

2 Q I meant by something like Batvox. I didn't mean
3 specifically what you use. I mean a mechanism like Batvox.

4 A I'm using one of those cutting edge technologies. I
5 cannot reveal the name.

6 Q No, I'm not asking you to do that. The perceptual method
7 which is what?

8 A By listening by the trained examiners.

9 Q Or by a combination of two methods is not considered a
10 positive means of identification and, therefore, the results
11 of these examinations are furnished for investigative guidance
12 only.

13 Is that your standard operating procedure?

14 A That is correct.

15 Q Now, you also, as we've talked about, gave testimony in
16 the Zimmerman case in which you talked about it and I want to
17 read you a quote beginning on page -- are there page numbers
18 in here? This doesn't appear to have page numbers unless I
19 missed it.

20 MR. STERN: There's no page numbers, Your Honor. So
21 I can read the quote and then show it to him but I don't have
22 the page number.

23 Q But is this a quote of your testimony not at the trial,
24 but at some other proceeding involving Mr. Zimmerman.

25 Question: Once you've processed the speech with

Nakasone - cross - Stern

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1 computer software, what do you do in your analysis next?

2 Answer by you: Next would be the fusion of the
3 scores coming from human examiners, what scores coming from
4 computer and I said like the auditor examiner, I mean, was
5 compression. The examiner comes up with a --

6 It actually said "exam" but I think it's supposed to
7 say "examiner."

8 The exam the comes up with match where the computer
9 says inconclusive or if computer says match also, only at that
10 time, examiner is allowed to render a final conclusion of
11 match, but if the computer comes up with a negative, a match
12 or no match, the examiner is forced to say inconclusive with
13 there are a variety of new rules to dictate what no
14 conclusions can be, a, you know, issued by first examiner is
15 final conclusions.

16 Question: You don't make any match based solely on
17 the computer software?

18 Answer: That's correct.

19 Question: It's always reviewed by a listener,
20 trained listener?

21 Answer: Right.

22 Question: And when you say matched, does that mean
23 the examiner, at least from the FBI's perspective, would be
24 able to testify in court?

25 Answer: No, sir. Right now are still under the

Nakasone - cross - Stern

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1 policy guidelines. The -- we can issue the report only as a
2 investigative guidance. We do not go to court and testify the
3 results of analysis we did. We, we about a couple of years.
4 That is a possibility, but we have a long way to go before the
5 system is ready to be rendered its opinion in the courtroom.

6 Is that a statement made by you in the Zimmerman case?

7 A It's coming from my YouTube or -- you know, it's
8 consistent with what I said.

9 Q Well, let me show it to you.

10 A Yes.

11 Q Would it help if I show to you?

12 A No, I was a little bit surprised I was talking about the
13 fusion matrix, but if I said it, maybe I did.

14 Q Well, let me show it to you and you can read it and see
15 if it reminds you that it's something you said on June 6, 2013.

16 A June.

17 (Pause.)

18 A Yes, I'm familiar with this.

19 Q I'm sorry. Could you say that again?

20 A I'm familiar with this.

21 Q Okay. Is that a statement you made on June 6th?

22 A The trial was on June 6th, yes. It must have been.

23 Q Okay. Now, I want to just ask you a few more questions
24 about how you determine whether or not an automatic system is
25 being used appropriately. Okay?

CMH

OCR

RMR

CRR

FCRR

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1 A Okay.

2 Q You know what an imposter set is, right?

3 A Yes. Usually imposter set means, you know, individuals,
4 that none of them belongs to the questioned voice.

5 Q And do you know what a reference set is?

6 A Usually, the community -- well, according to Batvox, I
7 should say, reference set means a smaller set of the universe
8 of background model and it could be much larger but it's sort
9 of, you know, reference set in which each individuals are
10 deemed to be very similar to the known individuals.

11 Q And would you need to see those sets to know if a system
12 was being used appropriately?

13 A I think this question, my answer would be the outside
14 scope of my testimony because I didn't check that.

15 Q No, I'm not asking if you did check it on this particular
16 case. I'm asking generally.

17 A Yes. Different, you know, level use different approach.
18 For example, within the FBI, we use different terminology to
19 do different things. Say, like we use the terminology control
20 data set.

21 Q Well, let me ask you the question a different way.

22 A Yes.

23 Q If a reference set were used wrong, could that affect the
24 way the test was done?

25 A It will.

CMH

OCR

RMR

CRR

FCRR

Nakasone - redirect - Ariail

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1 Q And if an imposter set was used wrong, could that affect
2 the way a test was done?

3 A It will.

4 Q And if you couldn't see those things, if you weren't
5 allowed to see those things, could you determine whether or
6 not an automated system was being used appropriately?

7 A Probably it would be difficult to assess if I know.

8 Q Okay.

9 MR. STERN: Judge, if I can have one moment.

10 THE COURT: Yes.

11 (Pause.)

12 MR. STERN: Thank you.

13 MR. ARIAIL: Just briefly, Your Honor.

14 THE COURT: Yes.

15 REDIRECT EXAMINATION BY MR. ARIAIL:

16 Q Dr. Nakasone, you were testifying a minute ago about the
17 FBI protocol. Does the FBI protocol include phonetic analysis
18 in its approach?

19 A No, it doesn't. I'm sorry. It does not.

20 Q And I think earlier, you testified that the use of
21 phonetic analysis would tend to improve the accuracy of an
22 analysis done with automated voice comparison?

23 A I believe so. That's my belief.

24 Q And a minute ago with Mr. Stern, you made a comment, you
25 said something about, I think it was in the connection with

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1 either formant analysis or acoustical analysis, you may have
2 injected something to Mr. Stern. Do you remember that question?

3 A Yes.

4 Q What is it that you were going to say?

5 A I think I testified already to what I meant that I wanted
6 to inject.

7 Q Okay. I'm sorry. What was it that you wanted to say?

8 A The fact that, you know, Mr. Lindh performed, you know, a
9 pitch analysis and he produced, you know, a chart of the pitch
10 distribution and that pitch distribution seems to be, you
11 know, seems to show a groupings of those data into two, namely
12 KS-1 and KS-2, but I was kind of, you know, happy to see the,
13 his final conclusions because he concluded that there was no
14 distinction between the two because that's correct answer by
15 me because there are some distinctions always.

16 The pitch is never stable and depending upon the
17 situational conditions, people use different pitches.
18 Probably in the morning, my, you know, pitch would be only 100
19 hertz, but, you know, as I'm talking in this courtroom, my
20 pitch goes up to 120 and depending upon who I am talking to,
21 it change all the time. So, therefore, slight change in the
22 pitch shouldn't be regarded as a, you know, a sign of, you
23 know, two distinctive individuals.

24 So, if he was -- if he, you know, reached the
25 conclusion that this difference in the pitch would indicate

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1 that, you know, there are two individuals, he didn't say that.
2 Instead, he decided to be a conservative. Okay, maybe I
3 shouldn't say anything about that, it's kind of inconclusive.
4 To me, that was the correct answer and I sort of was happy to
5 see that.

6 Q Mr. Stern asked you some questions about automatic
7 speaker recognition technology and Batvox. I'm going to
8 withdraw that.

9 You talked a little bit about process, on cross
10 about Mr. Lindh's process. And can you tell the Court what
11 your opinion is of the process that Mr. Lindh undertook to do
12 this analysis in this case?

13 A I can tell only what's written and also gathering from
14 what he had spoken, testified yesterday, and I do not know how
15 he interacts, but I could gather by reading his voice that he
16 was careful in the assessment of the data just by reading his
17 voice and also, you know, he sort of covered every, you know,
18 analysis tools available and he documented every steps he took
19 and the measurements he took.

20 He also hypothesize some formulation which also
21 seems to be dictated, you know, by standards. He didn't form
22 the hypothesis by himself. He sort of, you know,
23 hypothesis -- those hypothesis one, two and three were given
24 by the contributing, you know, organization or agency. But
25 this employs, okay, also, you know, a forensic analysis. He

CMH

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RMR

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FCRR

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1 sort of, you know, seems to be, you know, providing a
2 tremendous constants in his approach. It's his native tongue
3 and he can capture a lot of nuances no other people can. So
4 that's, that's good one.

5 You know, he was sort of, you know, fusing his
6 results, but not in a way we do. He really doesn't have to
7 because he's only one person or, you know, his team members,
8 but within the FBI, we have multiple examiners that have
9 multiple source of accounting and that's, in a way, the good
10 and bad. If you are only one man company, you don't have
11 really a fair, you know, second opinion, but I think that's
12 would be sort of left to the National Forensic Center in Sweden.

13 So, overall, he was going through very carefully,
14 but only one thing, you know. I mean, you know, I couldn't
15 really go into, you know, careful, you know, assessment of his
16 analysis. My task in this particular case per, you know,
17 request made by, you know, a Mr. Shreve Ariail was to assess
18 the quality of the audio he handled because that question
19 became crucial because, in the Zimmerman case, you know,
20 Mr. Tom Owen applied, did not input data for analysis. That
21 was the one, one of the major reasons he and, you know,
22 Dr. Reich were not admitted under the hearing and I just
23 wanted to point out that was not the same situation as Lindh.

24 Okay. Did I answer your question?

25 Q I think you did.

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1 BY MR. ARIAIL:

2 Q I think you did.

3 In your experience as an F.B.I. scientist, have you
4 ever seen a more thorough speaker comparison before, prepared?

5 A Mr. Lindh's report was very thorough, one of the most
6 comprehensive reports I have ever seen.

7 Q How many comparison reports have you looked at in your
8 career?

9 A Maybe a few thousands.

10 MR. ARIAIL: May I approach, Your Honor?

11 THE COURT: Yes.

12 Q In connection with your testimony, in preparation for
13 your testimony today, did you draft an E-mail to yourself?

14 A Yes, I did.

15 Q Is it marked 3500-HN-29?

16 A Yes.

17 Q Could you read that E-mail aloud to the Court.

18 MR. STERN: Objection.

19 THE COURT: Well, I don't know what the E-mail is.

20 I mean I don't know whether it is objectionable.

21 Q What is contained in the E-mail, Doctor Nakasone,
22 generally?

23 A It is about the-- my thought process and things that I
24 want to convey during my, you know, testimony. And since I'm
25 dealing with very sensitive issues, I didn't want to, you

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1 know, make inappropriate comments.

2 MR. STERN: I object to it.

3 THE COURT: All right.

4 THE WITNESS: I wrote an E-mail to myself.

5 THE COURT: All right.

6 Read it.

7 Q Go ahead and read it Doctor Nakasone.

8 A For your information.

9 I would like to offer the following thoughts to the
10 Court as a scientist who endeavored for about 30 years in
11 developing the speaker recognition technology, and as a
12 practitioner of the technology. Further, I would like to
13 clarify that the following thoughts do not represent the
14 official position of the Organization of Scientific Area
15 Committees, (OSAC), where I served as chair of the
16 subcommittee for speaker recognition.

17 I anticipate there will be a couple of more years at
18 least before the community has consensus based standards or
19 guidelines that underpins for the practice of speaker
20 recognition technology used as evidence in courtroom.

21 However, this thought should not preclude supporting
22 of a reasonably reliable technology and methodologies when
23 come along so long as it is proven to be qualified, credible,
24 have relevant knowledge, possess sufficient practical
25 experience, and taken under abundant caution for the

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1 limitation of the technology.

2 I believe Mr. Lindh's analysis and reported
3 conclusions in this case can provide a meaningful assistance
4 to the Court, and fact finders, if the conclusions are used in
5 corroboration with other evidence available, and with caution
6 for limitations.

7 That is the end of my E-mail.

8 MR. STERN: I move to strike that.

9 THE COURT: No, he testified to all of those things.

10 MR. STERN: So why is this admissible?

11 THE COURT: You know what, this is a hearing. I'm
12 not striking it.

13 All right.

14 Q Is that your opinion, Doctor Nakasone?

15 A Yes.

16 MR. ARIAIL: Nothing further.

17 THE COURT: All right. We are going to stop. I
18 have another case on at 3:30.

19 We are coming back when?

20 MR. STERN: I think Tuesday. If there is not a
21 reason, I will inform everyone before that.

22 MR. ARIAIL: That is fine with the government, Your
23 Honor. I just bring one issue to the Court's attention, just
24 because I think we got a lot of things on our agenda over the
25 next month.

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1 THE COURT: Yes.

2 MR. ARIAIL: But in connection with the Rule 15
3 depositions, Your Honor, we have exchanged or we have provided
4 along with attorney for Mr. Hashi, our objections and comments
5 on the Rule 15 deposition to defense counsel.

6 We have been advised by the defense that they had
7 expected to get comments back to us today, I think today.

8 MS. KELLMAN: Yes.

9 MR. ARIAIL: So we can get them to the Court and I
10 understand Your Honor would like presumably like combined
11 comments. I just would like to make sure that that process
12 gets finalized very quickly because I'm worried it will take a
13 lot of time to go through those documents. Depositions are
14 rather long.

15 Once the comments are edited. We have to then take
16 the depositions and give them to our videographer to edit the
17 appropriate testimony for the Court.

18 So I just-- I would like to understand from the
19 defense, when we are going to get their comments.

20 MR. STERN: I have been unexpectedly a little busy.
21 I will get to them as-- within the next couple of days.

22 MS. KELLMAN: Can we set Friday?

23 THE COURT: All right.

24 MR. ARIAIL: That is fine with the government.

25 MR. STERN: Judge, I have one other request, both of

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1 you and the government and marshals, unless somebody objects.
2 Since we have all the defendants here, if it is possible we
3 would like to meet with them. We all signed, I think we have
4 updated SAM, haven't we?

5 MR. ARIAIL: Yes-- with respect to a joint defense
6 meeting. I think the issue maybe with the marshals because
7 the modified SAM'S only provide for meeting at the Bureau of
8 Prisons. That is our issue.

9 So I don't know that we can have a meeting-- I can
10 talk to defense counsel afterwards.

11 MS. KELLMAN: Perhaps we can meet them in the back
12 for ten minutes.

13 THE COURT: Talk and let me know.

14 MS. KELLMAN: The marshal --

15 MR. STERN: I don't know if we need your
16 involvement.

17 MS. KELLMAN: The marshals are saying they can put
18 them in the back.

19 MARSHAL: Till the SAM order is modified it has to
20 be separate.

21 MS. KELLMAN: We can do it in the back here.

22 MARSHAL: You are not altogether.

23 MS. KELLMAN: We are altogether back there when we
24 come to court, all three of them are together.

25 MARSHAL: How do you want to work this?

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1 MR. STERN: They have been there together.

2 MS. KELLMAN: They are always in the back together.

3 MR. ARIAIL: I have to defer to the marshals. I
4 just have the information I was given earlier.

5 MS. KELLMAN: I am saying back there, when they are
6 housed back there.

7 THE COURT: What is your position? Until the SAM
8 order is modified what? I could not hear you.

9 MARSHAL: We have to do something here. It is
10 either, I can put them together or I can't put them together.

11 THE COURT: You can't put them together until the
12 SAM order is modified.

13 So, we will have to.

14 MS. KELLMAN: That is at the Bureau of Prisons.
15 That is my understanding. They are together every single time
16 we are in the-- come into the courtroom.

17 THE COURT: Get back and show it to me.

18 MS. KELLMAN: I think Mr. Ariail can confirm that.
19 That is it is at the Bureau of Prisons.

20 MR. ARIAIL: I can only advise as to what the SAM
21 provides. It provides that the defendants are to be
22 transported separately and to be housed separately in the
23 facilities and they are not to communicate with each other.

24 Whether they are or have been times where the rules
25 have been slightly bent or something, when they got to the

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1 Courthouse, I can't really speak to that. I don't think it
2 would be appropriate for me to speak to that. I have to defer
3 to the United States Marshal Service since it is their
4 facility.

5 THE COURT: Yes, so this can't happen today, until
6 we have modified SAM order.

7 MR. STERN: Okay.

8 MR. ARIAIL: I apologize, Your Honor.

9 THE COURT: All right. We didn't schedule a time,
10 Tuesday, May 5th.

11 Since Doctor Nakasone has to come back.

12 MR. ARIAIL: I think Your Honor, defense counsel had
13 indicated they weren't sure about that, and it might make
14 sense to wait until they report back and see what they
15 actually need.

16 MR. STERN: That's right. We will tell you by
17 Friday, whether we think we need to see Doctor Nakasone again.
18 If we don't, we will tell you and the government we do.

19 THE COURT: Okay.

20 MS. KELLMAN: One further question with respect to
21 the government's most recent in limine motion, I checked the
22 docket, I didn't see any date by which --

23 THE COURT: I actually have an order that will be on
24 the docket, the order reads as follows -- it will be on the
25 docket soon.

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1 By motion filed April 26th, 2015, the government
2 moves in limine to admit certain evidence against defendants
3 and precludes certain lines of questioning by the defense.
4 The defendants are directed to respond to the government's
5 motion on or before May 8th, any reply by the government shall
6 be filed on or before May 11th, 2015.

7 MS. KELLMAN: Thank you, Judge.

8 THE COURT: So this order will go on the docket
9 sheet.

10 You may step down.

11 THE WITNESS: Thank you, Your Honor.

12 (Witness excused.)

13 MR. ARIAIL: One last thing, I want to confirm at
14 trial, we will be able to keep materials in the side room here
15 if that is possible just because we will have a lot of
16 materials coming back and forth. I wanted to make sure that
17 is okay.

18 THE COURT: That is fine with me. Ms. Frullo.

19 COURTROOM DEPUTY: I will make arrangements.

20 THE COURT: She will make arrangements.

21 MR. ARIAIL: Thank you, Your Honor.

22 (Matter adjourned.)

23

24

25

I N D E X

WITNESS

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